Attachment to Response to KU AG-1 Question No. 201 Page 1015 of 2028 Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1016 of 2028 Charnas

## Clark, Ed

From:

Crescente, Angela

Sent:

Wednesday, October 12, 2011 3:06 PM

To:

'Joseph Holt'

Cc:

Wacker, Diana; Kinder, Debra

Subject:

RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE -

CLOSING ISSUE [ref:00 [ref:00D6KJDN.5006FE4Ma:ref]

Joe,

After playing around in DEV with a combination of depr exp and depr reserve adjustments, I think we finally got it to work. I am going to test it out one more time when DEV refreshes over the weekend to be sure of exactly which procedure I think worked. I will keep you posted. Are you still planning on a fix for the future so this doesn't happen again?

Thanks, Angela

From: Joseph Holt [mailto:jholt@pwrplan.com] Sent: Wednesday, October 12, 2011 12:01 PM

To: Crescente, Angela

Cc: Wacker, Diana; Kinder, Debra

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [

ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Angela,

I was forgetting something important here: For CPR Depr, individually depreciated assets, Depreciable Base = NBV, in this case, 0\$ cost — 104k reserve = -104K base, and therefore negative expense. I don't believe there should be any reserve for the PPL Purchase Accounting set of books. Therefore, if you adjust the reserve to 0\$ and rerun depreciation, this issue should go away.

Thanks! Joe

Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 12 October, 2011 10:16 AM

To: Joseph Holt

Cc: Wacker, Diana; Kinder, Debra

Subject: FW: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [

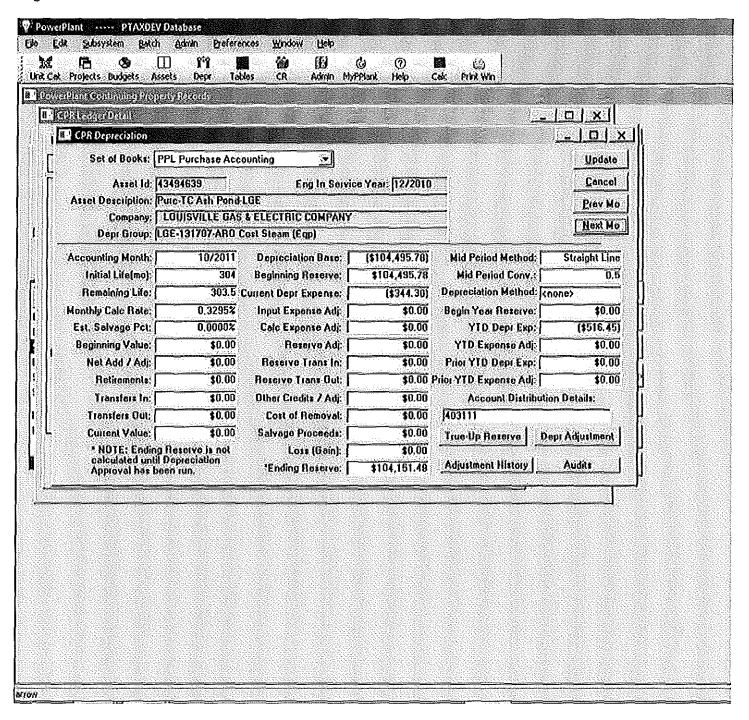
ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Joe,

#### Charnas

It's baaaaack! It doubled the base to get a full month of depr this time, so it's still broken.

Thanks, Angela



----Original Message----

From: Joseph Holt <a href="mailto:jholt@pwrplan.com">[mailto:jholt@pwrplan.com</a>]
Sent: Wednesday, October 12, 2011 10:39 AM

To: Crescente, Angela

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING

ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Angela,

I can connect now if you have a minute. I am on PowerPlant Support 24. Thank you, Joe Joseph Holt PowerPlan Consultants (404) 734 - 4155200 Galleria Parkway Suite 1300 Atlanta, GA 30339 ----Original Message----From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com] Sent: Wednesday, 12 October, 2011 8:35 AM To: Joseph Holt; PowerPlant Support; Wacker, Diana; Kinder, Debra Cc: Josh Hirschel Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ] OK. Thanks Joe! ----Original Message----From: Joseph Holt [mailto:jholt@pwrplan.com] Sent: Wednesday, October 12, 2011 9:34 AM To: Crescente, Angela; PowerPlant Support; Wacker, Diana; Kinder, Debra Cc: Josh Hirschel Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ] I will be available at 10:30 Eastern and will send you an email. Thanks! Joe Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339 ----Original Message----From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com] Sent: Wednesday, 12 October, 2011 8:32 AM To: PowerPlant Support; Wacker, Diana; Kinder, Debra Cc: Jim Ogilvie; Josh Hirschel; Jim Dahlby; Joseph Holt Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ] I can gotoassist whenever you are ready. ----Original Message----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Wednesday, October 12, 2011 9:30 AM

Attachment to Response to KU AG-1 Question No. 201 Page 1019 of 2028

Charnas

To: Wacker, Diana; Kinder, Debra; Crescente, Angela

Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING

ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Angela,

Can you please forward the email below to jholt@pwrplan.com? I am having trouble viewing these pictures.

Also, would it be possible for you to connect me to your PC via gotoassist?

Thank you, Joe

----- Original Message

From: Crescente, Angela [Angela.Crescente@lge-ku.com]

Sent: 10/12/2011 8:56 AM To: support@pwrplan.com; Diana.Wacker@lge-ku.com; Debra.Kinder@lge-ku.com

Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING

ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Joe,

You are correct, this problem does not happen with new AROs.

However, due to a situation that we had to fix in September this year with some of our AROs, we needed to settle some older ones and set them up again with a January date so that the cumulative effect would "catch up" accretion and depreciation through September. We also did this in November 2010 due to the acquisition from PPL in order to capture the November accretion. However, the difference is that the purchase accounting set of books was not completed until December 2010. This is the first time we have done a transition ARO since then and although not likely, I cannot say for sure that we will never need to set up transitions again if it is decided that we need to account for the cumulative effect.

Therefore, we still need a fix for this in the event that we have to do something with transitions again. We cannot correct what happened, because there is no purchase accounting cost or asset, only a basis from which depreciation is computed. In the three screenshots below, you can see there is no purchase accounting ending plant in service, only a depreciable base in the depr ledger.

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1020 of 2028 Charnas

[cid:image002.jpg@01CC88BC.B0401280]
[cid:image008.jpg@01CC88BC.B0401280]
[cid:image009.jpg@01CC88BC.B0401280]
Original Message From: Plant Support [mailto:support@pwrplan.com] Sent: Tuesday, October 11, 2011 11:26 PM To: Wacker, Diana; Kinder, Debra Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com; Crescente, Angela Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
Debra,
To remove the incorrect depreciation basis, you should be able to perform a standard depreciation adjustment or CPR adjustment for that basis only for the book cost.
My question on the transition piece is why are is the ARO transition module to set up new AROs. The transition module, including the cumulative effective adjustment, was built to help comply with the 2003 adoption of FAS143, but it is no longer generally used as the adoption period has passed.
I believe this problem could be avoided by entering new AROs through the standard ARO module although this would need to be tested in DEV.
Thanks!
Joe
Original Message
From: Kinder, Debra [Debra.Kinder@lge-ku.com]
Sent: 10/7/2011 9:15 AM

Attachment to Response to KU AG-1 Question No. 201 Page 1021 of 2028 Charnas

```
To: support@pwrplan.com<mailto:support@pwrplan.com>;
Diana.Wacker@lge-ku.com<mailto:Diana.Wacker@lge-ku.com>
Cc: jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>;
jholt@pwrplan.com<mailto:jholt@pwrplan.com>;
jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>;
idahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Angela.Crescente@lge-
ku.com<mailto:Angela.Crescente@lge-ku.com>
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
ISSUE
         [ ref:00D6KJDN.5006FE4Ma:ref ]
Elizabeth,
Our concerns are why this happened with the set up of the ARO transition assets, how to
prevent it from happening again and how to get the basis that was created on the Purchase
Accounting depreciation ledger removed so depreciation will not be calculated next month. Our
DEV instance will be refreshed this weekend if that will help with the research of these
issues.
Thanks,
   Deb
----Original Message----
From: Plant Support [mailto:support@pwrplan.com]<mailto:[mailto:support@pwrplan.com]>
Sent: Thursday, October 06, 2011 5:16 PM
To: Wacker, Diana
Cc: jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>;
jholt@pwrplan.com<mailto:jholt@pwrplan.com>;
jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>;
jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Kinder, Debra; Crescente, Angela
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
ISSUE [ ref:00D6KJDN.5006FE4Ma:ref ]
Diana,
```

You will need to do a depr adjustment to remove the amount from the one set of books.

Attachment to Response to KU AG-1 Question No. 201 Page 1022 of 2028 Charnas

Thanks,
Elizabeth Cowart
Original Message
From: Wacker, Diana [Diana.Wacker@lge-ku.com]
Sent: 10/6/2011 4:20 PM
To: support@pwrplan.com <mailto:support@pwrplan.com></mailto:support@pwrplan.com>
<pre>Cc: Debra.Kinder@lge-ku.com<mailto:debra.kinder@lge-ku.com>; Angela.Crescente@lge-ku.com<mailto:angela.crescente@lge-ku.com>; jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>; jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>; jholt@pwrplan.com<mailto:jholt@pwrplan.com></mailto:jholt@pwrplan.com></mailto:jhirschel@pwrplan.com></mailto:jdahlby@pwrplan.com></mailto:jogilvie@pwrplan.com></mailto:angela.crescente@lge-ku.com></mailto:debra.kinder@lge-ku.com></pre>
Subject: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE
All:
We have a Closing Issue. We set up Transition ARO's on both LGE and KU. Somehow these transition ARO's created a Purchase Accounting Depr Reserve Adjustment, which created entries for depreciation expense. It basically duplicated the financial set of books entry - the financial set of book entry is correct - BUT THE PURCHASE ACCOUNTING SET OF BOOKS IS NOT CORRECT.
There is a fictitious depr basis on the Purchase Accounting Set of Books, which created depreciation entries. I am sending screen shots of the Depr Ledger for the reserve activity for both sets of books.
This is in PRODUCTION only. Please let me know what other information I can provide to help you with getting this corrected.
Thanks,
Diana Wacker

502-627-4054

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Thanks,

Elizabeth Cowart

PowerPlant Support

770.937.3000

ref:00D6KJDN.5006FE4Ma:ref

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Attachment to Response to KU AG-1 Question No. 201 Page 1025 of 2028 Charnas

## Clark, Ed

From:

Joseph Holt <jholt@pwrplan.com>

Sent:

Wednesday, October 12, 2011 12:01 PM

To:

Crescente, Angela

Cc:

Wacker, Diana; Kinder, Debra

Subject:

RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE -

CLOSING ISSUE [ref:00 [ref:00D6KJDN.5006FE4Ma:ref]

#### Angela,

I was forgetting something important here: For CPR Depr, individually depreciated assets, Depreciable Base = NBV, in this case, 0\$ cost – 104k reserve = -104K base, and therefore negative expense. I don't believe there should be any reserve for the PPL Purchase Accounting set of books. Therefore, if you adjust the reserve to 0\$ and rerun depreciation, this issue should go away.

Thanks!

Joe

Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339

From: Crescente, Angela [mailto:Angela.Crescente@ige-ku.com]

Sent: Wednesday, 12 October, 2011 10:16 AM

To: Joseph Holt

Cc: Wacker, Diana; Kinder, Debra

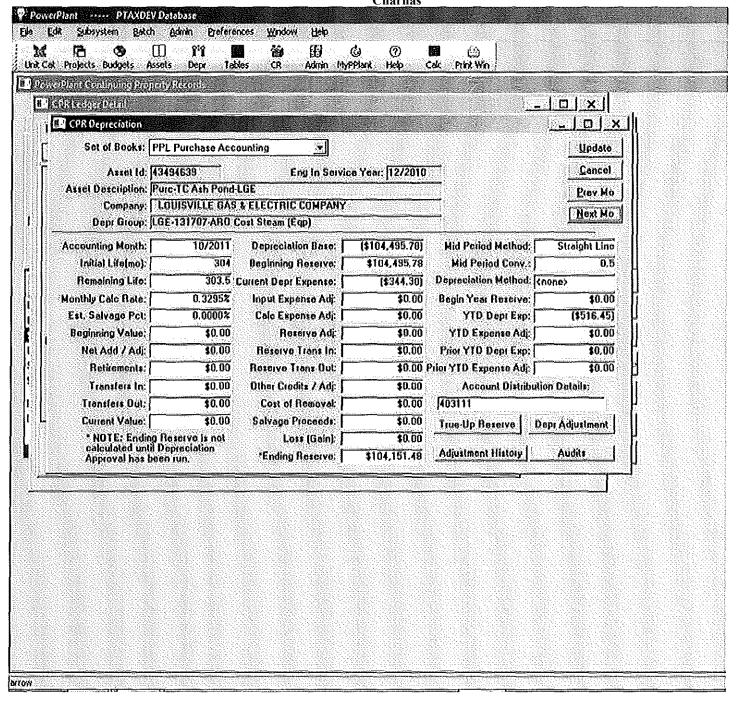
Subject: FW: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [

ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Joe,

It's baaaaack! It doubled the base to get a full month of depr this time, so it's still broken.

Thanks, Angela



----Original Message----

From: Joseph Holt [mailto:jholt@pwrplan.com] Sent: Wednesday, October 12, 2011 10:39 AM

To: Crescente, Angela

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:000 [ ref:00D6KJDN.5006FE4Ma:ref ]

Angela,

I can connect now if you have a minute. I am on PowerPlant Support 24.

Thank you, Joe

Attachment to Response to KU AG-1 Question No. 201 Page 1027 of 2028 Charnas

Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339

Angela,

```
----Original Message----
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]
Sent: Wednesday, 12 October, 2011 8:35 AM
To: Joseph Holt; PowerPlant Support; Wacker, Diana; Kinder, Debra
Cc: Josh Hirschel
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
OK. Thanks Joe!
----Original Message----
From: Joseph Holt [mailto:jholt@pwrplan.com]
Sent: Wednesday, October 12, 2011 9:34 AM
To: Crescente, Angela; PowerPlant Support; Wacker, Diana; Kinder, Debra
Cc: Josh Hirschel
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
I will be available at 10:30 Eastern and will send you an email.
Thanks!
Joe
Joseph Holt
PowerPlan Consultants
(404) 734 - 4155
200 Galleria Parkway
Suite 1300
Atlanta, GA 30339
----Original Message----
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]
Sent: Wednesday, 12 October, 2011 8:32 AM
To: PowerPlant Support; Wacker, Diana; Kinder, Debra
Cc: Jim Ogilvie; Josh Hirschel; Jim Dahlby; Joseph Holt
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
I can gotoassist whenever you are ready.
----Original Message----
From: Plant Support [mailto:support@pwrplan.com]
Sent: Wednesday, October 12, 2011 9:30 AM
To: Wacker, Diana; Kinder, Debra; Crescente, Angela
Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
```

Attachment to Response to KU AG-1 Question No. 201 Page 1028 of 2028 Charnas

Can you please forward the email below to jholt@pwrplan.com? I am having trouble viewing these pictures.

Also, would it be possible for you to connect me to your PC via gotoassist?

Thank you, Joe

----- Original Message -----

From: Crescente, Angela [Angela.Crescente@lge-ku.com]

Sent: 10/12/2011 8:56 AM To: support@pwrplan.com; Diana.Wacker@lge-ku.com; Debra.Kinder@lge-ku.com

Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING

ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Joe,

You are correct, this problem does not happen with new AROs.

However, due to a situation that we had to fix in September this year with some of our AROs, we needed to settle some older ones and set them up again with a January date so that the cumulative effect would "catch up" accretion and depreciation through September. We also did this in November 2010 due to the acquisition from PPL in order to capture the November accretion. However, the difference is that the purchase accounting set of books was not completed until December 2010. This is the first time we have done a transition ARO since then and although not likely, I cannot say for sure that we will never need to set up transitions again if it is decided that we need to account for the cumulative effect.

Therefore, we still need a fix for this in the event that we have to do something with transitions again. We cannot correct what happened, because there is no purchase accounting cost or asset, only a basis from which depreciation is computed. In the three screenshots below, you can see there is no purchase accounting ending plant in service, only a depreciable base in the depr ledger.

Thanks,

Angela

[cid:image002.jpg@01CC88BC.B0401280]

[cid:image008.jpg@01CC88BC.B0401280]

Attachment to Response to KU AG-1 Question No. 201 Page 1029 of 2028 Charnas

[cid:image009.jpg@01CC88BC.B0401280]
Original Message From: Plant Support [mailto:support@pwrplan.com] Sent: Tuesday, October 11, 2011 11:26 PM To: Wacker, Diana; Kinder, Debra Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com; Crescente, Angela Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
Debra,
To remove the incorrect depreciation basis, you should be able to perform a standard depreciation adjustment or CPR adjustment for that basis only for the book cost.
My question on the transition piece is why are is the ARO transition module to set up new AROs. The transition module, including the cumulative effective adjustment, was built to help comply with the 2003 adoption of FAS143, but it is no longer generally used as the adoption period has passed.
I believe this problem could be avoided by entering new AROs through the standard ARO module although this would need to be tested in DEV.
Thanks!
Joe
Original Message
From: Kinder, Debra [Debra Kinder@lge-ku.com]
Sent: 10/7/2011 9:15 AM
To: support@pwrplan.com <mailto:support@pwrplan.com>;</mailto:support@pwrplan.com>
Diana.Wacker@lge-ku.com <mailto:diana.wacker@lge-ku.com></mailto:diana.wacker@lge-ku.com>

# Attachment to Response to KU AG-1 Question No. 201 Page 1030 of 2028

Charnas

```
Cc: jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>;
jholt@pwrplan.com<mailto:jholt@pwrplan.com>;
jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>;
jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Angela.Crescente@lge-
ku.com<mailto:Angela.Crescente@lge-ku.com>
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
         [ ref:00D6KJDN.5006FE4Ma:ref ]
ISSUE
Elizabeth,
Our concerns are why this happened with the set up of the ARO transition assets, how to
prevent it from happening again and how to get the basis that was created on the Purchase
Accounting depreciation ledger removed so depreciation will not be calculated next month. Our
DEV instance will be refreshed this weekend if that will help with the research of these
issues.
Thanks,
   Deb
----Original Message----
From: Plant Support [mailto:support@pwrplan.com]<mailto:[mailto:support@pwrplan.com]>
Sent: Thursday, October 06, 2011 5:16 PM
To: Wacker, Diana
Cc: jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>;
jholt@pwrplan.com<mailto:jholt@pwrplan.com>;
jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>;
jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Kinder, Debra; Crescente, Angela
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING
ISSUE [ ref:00D6KJDN.5006FE4Ma:ref ]
Diana,
You will need to do a depr adjustment to remove the amount from the one set of books.
Thanks,
```

Attachment to Response to KU AG-1 Question No. 201 Page 1031 of 2028 Charnas

Elizabeth Cowart
Original Message
From: Wacker, Diana [Diana.Wacker@lge-ku.com]
Sent: 10/6/2011 4:20 PM
To: support@pwrplan.com <mailto:support@pwrplan.com></mailto:support@pwrplan.com>
<pre>Cc: Debra.Kinder@lge-ku.com<mailto:debra.kinder@lge-ku.com>; Angela.Crescente@lge-ku.com</mailto:debra.kinder@lge-ku.com></pre> ku.com <mailto:angela.crescente@lge-ku.com>; jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>; jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>; jholt@pwrplan.com<mailto:jholt@pwrplan.com></mailto:jholt@pwrplan.com></mailto:jhirschel@pwrplan.com></mailto:jdahlby@pwrplan.com></mailto:jogilvie@pwrplan.com></mailto:angela.crescente@lge-ku.com>
Subject: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE
All:
We have a Closing Issue. We set up Transition ARO's on both LGE and KU. Somehow these transition ARO's created a Purchase Accounting Depr Reserve Adjustment, which created entries for depreciation expense. It basically duplicated the financial set of books entry - the financial set of book entry is correct - BUT THE PURCHASE ACCOUNTING SET OF BOOKS IS NOT CORRECT.
There is a fictitious depr basis on the Purchase Accounting Set of Books, which created depreciation entries. I am sending screen shots of the Depr Ledger for the reserve activity for both sets of books.
This is in PRODUCTION only. Please let me know what other information I can provide to help you with getting this corrected.
Thanks,
Diana Wacker

502-627-4054

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Thanks,

Elizabeth Cowart

PowerPlant Support

770.937.3000

ref:00D6KJDN.5006FE4Ma:ref

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Attachment to Response to KU AG-1 Question No. 201 Page 1033 of 2028 Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1034 of 2028 Charnas

### Clark, Ed

From:

Joseph Holt <jholt@pwrplan.com>

Sent:

Wednesday, October 12, 2011 11:20 AM

To:

Crescente, Angela

Cc: Subject: Wacker, Diana, Kinder, Debra
RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE -

CLOSING ISSUE [ref:00 [ref:00D6KJDN.5006FE4Ma:ref]

Hmm...I'll see if I can figure out where it might be getting this base and will let you know. I will be back in the office tomorrow and Friday. We'll get this worked out.

Thanks,

Joe

Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 12 October, 2011 10:16 AM

To: Joseph Holt

Cc: Wacker, Diana; Kinder, Debra

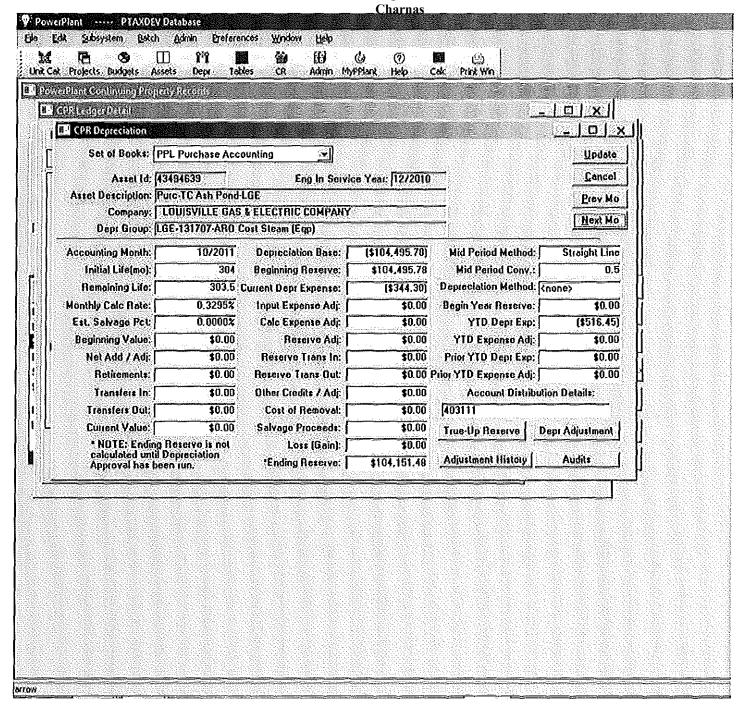
Subject: FW: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [

ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Joe,

It's baaaaack! It doubled the base to get a full month of depr this time, so it's still broken.

Thanks, Angela



----Original Message----

From: Joseph Holt [mailto:jholt@pwrplan.com] Sent: Wednesday, October 12, 2011 10:39 AM

To: Crescente, Angela

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING

ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Angela,

I can connect now if you have a minute. I am on PowerPlant Support 24.

Thank you, Joe Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339

Angela,

----Original Message----From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com] Sent: Wednesday, 12 October, 2011 8:35 AM To: Joseph Holt; PowerPlant Support; Wacker, Diana; Kinder, Debra Cc: Josh Hirschel Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ] OK. Thanks Joe! ----Original Message----From: Joseph Holt [mailto:jholt@pwrplan.com] Sent: Wednesday, October 12, 2011 9:34 AM To: Crescente, Angela; PowerPlant Support; Wacker, Diana; Kinder, Debra Cc: Josh Hirschel Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ] I will be available at 10:30 Eastern and will send you an email. Thanks! Joe Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339 ----Original Message----From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com] Sent: Wednesday, 12 October, 2011 8:32 AM To: PowerPlant Support; Wacker, Diana; Kinder, Debra Cc: Jim Ogilvie; Josh Hirschel; Jim Dahlby; Joseph Holt Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ] I can gotoassist whenever you are ready. ----Original Message----From: Plant Support [mailto:support@pwrplan.com] Sent: Wednesday, October 12, 2011 9:30 AM To: Wacker, Diana; Kinder, Debra; Crescente, Angela Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Attachment to Response to KU AG-1 Question No. 201 Page 1037 of 2028 Charnas

Can you please forward the email below to jholt@pwrplan.com? I am having trouble viewing these pictures.

Also, would it be possible for you to connect me to your PC via gotoassist?

Thank you, Joe

----- Original Message

From: Crescente, Angela [Angela.Crescente@lge-ku.com]

Sent: 10/12/2011 8:56 AM To: support@pwrplan.com; Diana.Wacker@lge-ku.com; Debra.Kinder@lge-ku.com

Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING

ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]

Joe,

You are correct, this problem does not happen with new AROs.

However, due to a situation that we had to fix in September this year with some of our AROs, we needed to settle some older ones and set them up again with a January date so that the cumulative effect would "catch up" accretion and depreciation through September. We also did this in November 2010 due to the acquisition from PPL in order to capture the November accretion. However, the difference is that the purchase accounting set of books was not completed until December 2010. This is the first time we have done a transition ARO since then and although not likely, I cannot say for sure that we will never need to set up transitions again if it is decided that we need to account for the cumulative effect.

Therefore, we still need a fix for this in the event that we have to do something with transitions again. We cannot correct what happened, because there is no purchase accounting cost or asset, only a basis from which depreciation is computed. In the three screenshots below, you can see there is no purchase accounting ending plant in service, only a depreciable base in the depr ledger.

Thanks,

Angela

[cid:image002.jpg@01CC88BC.B0401280]

[cid:image008.jpg@01CC88BC.B0401280]

Attachment to Response to KU AG-1 Question No. 201 Page 1038 of 2028 Charnas

[cid:image009.jpg@01CC88BC.B0401280]
Original Message From: Plant Support [mailto:support@pwrplan.com] Sent: Tuesday, October 11, 2011 11:26 PM To: Wacker, Diana; Kinder, Debra Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com; Crescente, Angela Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
Debra,
To remove the incorrect depreciation basis, you should be able to perform a standard depreciation adjustment or CPR adjustment for that basis only for the book cost.
My question on the transition piece is why are is the ARO transition module to set up new AROs. The transition module, including the cumulative effective adjustment, was built to help comply with the 2003 adoption of FAS143, but it is no longer generally used as the adoption period has passed.
I believe this problem could be avoided by entering new AROs through the standard ARO module although this would need to be tested in DEV.
Thanks!
Joe
Original Message
From: Kinder, Debra [Debra.Kinder@lge-ku.com]
Sent: 10/7/2011 9:15 AM
To: support@pwrplan.com <mailto:support@pwrplan.com>;</mailto:support@pwrplan.com>
Diana.Wacker@lge-ku.com <mailto:diana.wacker@lge-ku.com></mailto:diana.wacker@lge-ku.com>

# Attachment to Response to KU AG-1 Question No. 201 Page 1039 of 2028

Charnas

Cc: jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>; jholt@pwrplan.com<mailto:jholt@pwrplan.com>; jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>; jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Angela.Crescente@lgeku.com<mailto:Angela.Crescente@lge-ku.com> Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00D6KJDN.5006FE4Ma:ref ] Elizabeth, Our concerns are why this happened with the set up of the ARO transition assets, how to prevent it from happening again and how to get the basis that was created on the Purchase Accounting depreciation ledger removed so depreciation will not be calculated next month. Our DEV instance will be refreshed this weekend if that will help with the research of these issues. Thanks, Deb ----Original Message----From: Plant Support [mailto:support@pwrplan.com]<mailto:[mailto:support@pwrplan.com]> Sent: Thursday, October 06, 2011 5:16 PM To: Wacker, Diana Cc: jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>; jholt@pwrplan.com<mailto:jholt@pwrplan.com>; jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>; jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Kinder, Debra; Crescente, Angela Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00D6KJDN.5006FE4Ma:ref ] Diana, You will need to do a depr adjustment to remove the amount from the one set of books. Thanks,

Attachment to Response to KU AG-1 Question No. 201 Page 1040 of 2028 Charnas

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----- Original Message

From: Wacker, Diana [Diana.Wacker@lge-ku.com]

Sent: 10/6/2011 4:20 PM

To: support@pwrplan.com<mailto:support@pwrplan.com>

Cc: Debra.Kinder@lge-ku.com<mailto:Debra.Kinder@lge-ku.com>; Angela.Crescente@lgeku.com<mailto:Angela.Crescente@lge-ku.com>;

jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>; jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>;

jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>;

jholt@pwrplan.com<mailto:jholt@pwrplan.com>

Subject: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE

#### A11:

We have a Closing Issue. We set up Transition ARO's on both LGE and KU. transition ARO's created a Purchase Accounting Depr Reserve Adjustment, which created entries for depreciation expense. It basically duplicated the financial set of books entry - the financial set of book entry is correct - BUT THE PURCHASE ACCOUNTING SET OF BOOKS IS NOT CORRECT.

There is a fictitious depr basis on the Purchase Accounting Set of Books, which created depreciation entries. I am sending screen shots of the Depr Ledger for the reserve activity for both sets of books.

This is in PRODUCTION only. Please let me know what other information I can provide to help you with getting this corrected.

Thanks,

Diana Wacker

502-627-4054

Attachment to Response to KU AG-1 Question No. 201 Page 1041 of 2028 Charnas

\_\_\_\_\_

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Thanks,

Elizabeth Cowart

PowerPlant Support

770.937.3000

ref:00D6KJDN.5006FE4Ma:ref

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Attachment to Response to KU AG-1 Question No. 201 Page 1043 of 2028 Charnas

### Clark, Ed

From:

Joseph Holt <jholt@pwrplan.com>

Sent:

Wednesday, October 12, 2011 10:39 AM

To:

Crescente, Angela

Subject:

RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE -

CLOSING ISSUE [ref:00 [ref:00D6KJDN.5006FE4Ma:ref]

Angela,

I can connect now if you have a minute. I am on PowerPlant Support 24.

Thank you,

Joe

Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339

----Original Message----

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 12 October, 2011 8:35 AM

To: Joseph Holt; PowerPlant Support; Wacker, Diana; Kinder, Debra

Cc: Josh Hirschel

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [

ref:00D6KJDN.5006FE4Ma:ref]

OK. Thanks Joe!

----Original Message----

From: Joseph Holt [mailto:jholt@pwrplan.com] Sent: Wednesday, October 12, 2011 9:34 AM

To: Crescente, Angela; PowerPlant Support; Wacker, Diana; Kinder, Debra

Cc: Josh Hirschel

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [

ref:00D6KJDN.5006FE4Ma:ref]

I will be available at 10:30 Eastern and will send you an email.

Thanks!

Joe

Joseph Holt PowerPlan Consultants (404) 734 - 4155 200 Galleria Parkway Suite 1300 Atlanta, GA 30339

Attachment to Response to KU AG-1 Question No. 201 Page 1044 of 2028 Charnas

----Original Message-----From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com] Sent: Wednesday, 12 October, 2011 8:32 AM To: PowerPlant Support; Wacker, Diana; Kinder, Debra Cc: Jim Ogilvie; Josh Hirschel; Jim Dahlby; Joseph Holt Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref] I can gotoassist whenever you are ready. ----Original Message-----Sent: Wednesday, October 12, 2011 9:30 AM

From: Plant Support [mailto:support@pwrplan.com]

To: Wacker, Diana; Kinder, Debra; Crescente, Angela

Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [

ref:00D6KJDN.5006FE4Ma:ref]

Angela,

Can you please forward the email below to jholt@pwrplan.com? I am having trouble viewing these pictures.

Also, would it be possible for you to connect me to your PC via gotoassist?

Thank you, Joe

----- Original Message -----

From: Crescente, Angela [Angela.Crescente@lge-ku.com]

Sent: 10/12/2011 8:56 AM To: support@pwrplan.com; Diana.Wacker@lge-ku.com; Debra.Kinder@lge-ku.com

Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ref:00 [

ref:00D6KJDN.5006FE4Ma:ref]

Joe,

You are correct, this problem does not happen with new AROs.

However, due to a situation that we had to fix in September this year with some of our AROs, we needed to settle some older ones and set them up again with a January date so that the cumulative effect would "catch up" accretion and depreciation through September. We also did this in November 2010 due to the acquisition from PPL in order to capture the November accretion. However, the difference is that the purchase accounting set of books was not completed until December 2010. This is the first time we have done a transition ARO since then and although not likely, Attachment to Response to KU AG-1 Question No. 201 Page 1045 of 2028 Charnas

I cannot say for sure that we will never need to set up transitions again if it is decided that we need to account for the cumulative effect.

Therefore, we still need a fix for this in the event that we have to do something with transitions again. We cannot correct what happened, because there is no purchase accounting cost or asset, only a basis from which depreciation is computed. In the three screenshots below, you can see there is no purchase accounting ending plant in service, only a depreciable base in the depr ledger.
Thanks,
Angela
[cid:image002.jpg@01CC88BC.B0401280]
[cid:image008.jpg@01CC88BC.B0401280]
[cid:image009.jpg@01CC88BC.B0401280]
Original Message From: Plant Support [mailto:support@pwrplan.com] Sent: Tuesday, October 11, 2011 11:26 PM To: Wacker, Diana; Kinder, Debra Cc: jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com; Crescente, Angela Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00 [ ref:00D6KJDN.5006FE4Ma:ref ]
renoodololol 1.3000 Lainaner j
Debra,
To remove the incorrect depreciation basis, you should be able to perform a standard depreciation adjustment or CPR

My question on the transition piece is why are is the ARO transition module to set up new AROs. The transition module, including the cumulative effective adjustment, was built to help comply with the 2003 adoption of FAS143, but it is no longer generally used as the adoption period has passed.

adjustment for that basis only for the book cost.

Attachment to Response to KU AG-1 Question No. 201 Page 1046 of 2028 Charnas

I believe this problem could be avoided by entering new AROs through the standard ARO module, although this would need to be tested in DEV.
Thanks!
Joe
Original Message
From: Kinder, Debra [Debra.Kinder@lge-ku.com]
Sent: 10/7/2011 9:15 AM
To: support@pwrplan.com <mailto:support@pwrplan.com>;</mailto:support@pwrplan.com>
Diana.Wacker@lge-ku.com <mailto:diana.wacker@lge-ku.com></mailto:diana.wacker@lge-ku.com>
Cc: jogilvie@pwrplan.com <mailto:jogilvie@pwrplan.com>; jholt@pwrplan.com<mailto:jholt@pwrplan.com>; jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>; jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Angela.Crescente@lge-ku.com<mailto:angela.crescente@lge-ku.com></mailto:angela.crescente@lge-ku.com></mailto:jdahlby@pwrplan.com></mailto:jhirschel@pwrplan.com></mailto:jholt@pwrplan.com></mailto:jogilvie@pwrplan.com>
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00D6KJDN.5006FE4Ma:ref]
Elizabeth,
Our concerns are why this happened with the set up of the ARO transition assets, how to prevent it from happening again and how to get the basis that was created on the Purchase Accounting depreciation ledger removed so depreciation will not be calculated next month. Our DEV instance will be refreshed this weekend if that will help with the research of these issues.
Thanks,
Deb

Attachment to Response to KU AG-1 Question No. 201 Page 1047 of 2028 Charnas

Original Message
From: Plant Support [mailto:support@pwrplan.com] <mailto:[mailto:support@pwrplan.com]></mailto:[mailto:support@pwrplan.com]>
Sent: Thursday, October 06, 2011 5:16 PM
To: Wacker, Diana
Cc: jogilvie@pwrplan.com <mailto:jogilvie@pwrplan.com>; jholt@pwrplan.com<mailto:jholt@pwrplan.com>; jhirschel@pwrplan.com<mailto:jhirschel@pwrplan.com>; jdahlby@pwrplan.com<mailto:jdahlby@pwrplan.com>; Kinder, Debra; Crescente, Angela</mailto:jdahlby@pwrplan.com></mailto:jhirschel@pwrplan.com></mailto:jholt@pwrplan.com></mailto:jogilvie@pwrplan.com>
Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [ ref:00D6KJDN.5006FE4Ma:ref]
Diana,
You will need to do a depr adjustment to remove the amount from the one set of books.
Thanks,
Elizabeth Cowart
Original Message
From: Wacker, Diana [Diana.Wacker@lge-ku.com]
Sent: 10/6/2011 4:20 PM
Го: support@pwrplan.com <mailto:support@pwrplan.com></mailto:support@pwrplan.com>
Cc: Debra.Kinder@lge-ku.com <mailto:debra.kinder@lge-ku.com>; Angela.Crescente@lge-ku.com<ku.com<mailto:angela.crescente@lge-ku.com>; jogilvie@pwrplan.com<mailto:jogilvie@pwrplan.com>; dahlby@pwrplan.com<mailto:jhirschel@pwrplan.com>; holt@pwrplan.com<mailto:jhirschel@pwrplan.com>; holt@pwrplan.com<mailto:jhirschel@pwrplan.com></mailto:jhirschel@pwrplan.com></mailto:jhirschel@pwrplan.com></mailto:jhirschel@pwrplan.com></mailto:jogilvie@pwrplan.com></ku.com<mailto:angela.crescente@lge-ku.com></mailto:debra.kinder@lge-ku.com>
Subject: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE

All:

Attachment to Response to KU AG-1 Question No. 201 Page 1048 of 2028 Charnas

We have a Closing Issue. We set up Transition ARO's on both LGE and KU. Somehow these transition ARO's created a Purchase Accounting Depr Reserve Adjustment, which created entries for depreciation expense. It basically duplicated the financial set of books entry - the financial set of book entry is correct - BUT THE PURCHASE ACCOUNTING SET OF BOOKS IS NOT CORRECT.

There is a fictitious depr basis on the Purchase Accounting Set of Books, which created depreciation entries. I am sending screen shots of the Depr Ledger for the reserve activity for both sets of books.

This is in PRODUCTION only. Please let me know what other information I can provide to help you with getting this corrected.

Thanks,

Diana Wacker

502-627-4054

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Attachment to Response to KU AG-1 Question No. 201 Page 1049 of 2028 Charnas

, o, o, o o	
Thanks,	
Elizabeth Cowart	
PowerPlant Support	
770.937.3000	
ref:00D6KJDN.5006FE4Ma:ref	

vour/any storage medium.

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Attachment to Response to KU AG-1 Question No. 201 Page 1050 of 2028 Charnas

#### Clark, Ed

From:

Sechler, Joel R < JRSechler@pplweb.com>

Sent:

Tuesday, October 11, 2011 4:08 PM

To:

Crescente, Angela

Subject:

LGE-KU ARO Note for Q3

Importance:

High

Hi Angela,

I'm working on the consolidated ARO Note for Q3 for PPL Corp. I know the LGE reporting package isn't due until next week, but could I get a copy of the amounts for your ARO note when they are finished and reviewed? It will be a big help in meeting the deadline. Let me know if you have any questions or concerns.

Thank you,

Joel Sechler
Financial Accounting - Asset Management
610-774-3948
JRSechler@pplweb.com, GENTW10

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Attachment to Response to KU AG-1 Question No. 201 Page 1051 of 2028 Charnas

# Clark, Ed

From:

Crescente, Angela

Sent:

Tuesday, October 11, 2011 3:49 PM Wiseman, Sara; Erskine, Greg

To: Subject:

FW: ARO Footnote - 9/30/11

The information looks OK to me.

Thanks, Angela

From: Erskine, Greg

**Sent:** Tuesday, October 11, 2011 3:45 PM **To:** Crescente, Angela; Wiseman, Sara **Subject:** FW: ARO Footnote - 9/30/11

#### Sara and Angela:

I've updated the ARO footnote in the 10-Q to reflect the information in the file attached to Angela's e-mail below. The Word document I've attached to this e-mail contains the current version of the ARO footnote from the 10-Q. This version of the footnote should reflect the information Angela gave me.

Can you take a look at the attached version of the ARO footnote and let me know if the LKE/LG&E/KU information looks OK, please?

The footnote also contains ARO information for other PPL companies. You can ignore that information if you like.

Thanks,

Greg



From: Crescente, Angela

Sent: Tuesday, October 11, 2011 3:26 PM

**To:** Erskine, Greg **Cc:** Wiseman, Sara

Subject: FW: ARO Footnote - 9/30/11

Greg:

Please see the attached ARO Footnote.

Attachment to Response to KU AG-1 Question No. 201 Page 1052 of 2028 Charnas



Thanks, Angela

From: Erskine, Greg

Sent: Friday, October 07, 2011 2:51 PM

To: Crescente, Angela

Subject: FW: ARO Footnote - 9/30/11

#### Angela:

I mentioned below that the 9/30/11 noncurrent ARO liability balances (in millions) that you put into the attached file need to agree with the 9/30/11 noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets for LKE, LG&E and KU (in millions). I also mentioned that I didn't yet know the noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets, but I would know them on or near Monday, October 10, and that I would e-mail the balances to you when I knew them. Well, I know them now, and here they are:

LKE 113 LG&E 54 KU 59

Please make sure that the 9/30/11 noncurrent balances that you put into the attached file equal the above balances.

If you have any questions, let me know.

Thanks,

Greg

From: Erskine, Greg

Sent: Friday, September 30, 2011 10:38 AM

To: Crescente, Angela

Subject: ARO Footnote - 9/30/11

#### Angela:

I need to get information from you to complete the LKE, LG&E and KU sections of the ARO footnote that will appear in the 9/30/11 PPL Form 10-Q. I've attached a file that shows the information I need. Can you replace the question marks in the file with amounts and return the file to me by Tuesday, October 11, please?

The file calls for a rollforward of the ARO liabilities for LKE, LG&E and KU for the nine months ended 6/30/11 (in millions). It also calls for a split of the 9/30/11 ARO liability balances between current and noncurrent for LKE, LG&E and KU (also in millions).

Attachment to Response to KU AG-1 Question No. 201 Page 1053 of 2028 Charnas

The 9/30/11 noncurrent ARO liability balances (in millions) that you put into the attached file need to agree with the 9/30/11 noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets for LKE, LG&E and KU (in millions). I don't yet know the noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets, but I should know them on or near Monday, October 10. I will e-mail the balances to you when I know them. Please make sure that the 9/30/11 noncurrent balances that you put into the attached file equal the balances that I e-mail to you.

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Some of the formulas in the attached file return #VALUE!. After you replace the question marks with the correct 9/30/11 amounts, the #VALUE!s should go away.

I included the split between current and noncurrent we reported at 12/31/10 in the attached file for your reference.

Thanks,

Greg



Book7.xlsx

#### 16. Asset Retirement Obligations

(PPL, LKE, LG&E and KU)

Accretion expense recorded by LG&E and KU is offset with a regulatory asset, such that there is no income statement impact.

(PPL, PPL Energy Supply, LKE, LG&E and KU)

The changes in the carrying amounts of AROs were as follows.

			l	PPL			
	]	PPL	Energ	y Supply	 LKE	 LG&E	 KU
ARO at December 31, 2010	\$	448	\$	345	\$ 103	\$ 49	\$ 54
Accretion expense		16		12	4	2	2
Obligations assumed in acquisition of WPD							
Midlands (a)		43					
Derecognition (b)				(5)			
Changes in estimated cash flow or settlement date		(3)		(3)	7	4	3
Effect of foreign currency exchange rates		I					
Obligations settled		(6)		(6)			
ARO at September 30, 2011	\$	499	\$	343	\$ 114	\$ 55	\$ 59
•						 	

- (a) Obligations required under U.K. law related to treated wood poles, gas-filled switchgear and fluid-filled cables. See Note 8 for additional information on the acquisition.
- (b) Represents AROs derecognized as a result of PPL Energy Supply's distribution of its membership interest in PPL Global to PPL Energy Supply's parent, PPL Energy Funding. See Note ##ADD for additional information on the distribution.

The classification of AROs on the Balance Sheet was as follows.

				Septem	ber 30 <b>, 2</b> 01	1			
	PPL	I	PPL Energy Supply		LKE	1	LG&E	B	KU
Current portion (a) Long-term portion (b) Total	\$ 49 \$ 49		7 336 343	\$ \$	1 113 114	\$ <u>\$</u>	54 55	\$ \$	59 59
				Deceml	er 31, 201	0			
	PPL		PL Energy Supply		LKE	1	LG&E	_	KU
Current portion (a) Long-term portion (b) Total	\$ 1 43 <u>\$</u> 44		13 332 345	\$ \$	103	<u>\$</u>	49	<u>\$</u>	54 54

- (a) Included in "Other current liabilities."
- (b) Included in "Asset retirement obligations."

(PPL and PPL Energy Supply)

The most significant ARO recorded by PPL and PPL Energy Supply relates to the decommissioning of the Susquehanna nuclear plant. The accrued nuclear decommissioning obligation was \$281 million and \$270 million at September 30, 2011 and December 31, 2010, and is included in "Asset retirement obligations" on the Balance Sheets.

Assets in the NDT funds are legally restricted for purposes of settling PPL's and PPL Energy Supply's ARO related to the decommissioning of the Susquehanna station. The aggregate fair value of these assets was \$648 million and \$618 million at September 30, 2011 and December 31, 2010, and is included in "Nuclear plant decommissioning trust funds" on the Balance Sheets. See Notes ##FVMCC and ##AFS for additional information on these assets.

# Attachment to Response to KU AG-1 Question No. 201 Page 1055 of 2028 Charnas

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

10/11/11 2:53 PM

	LKE	LG&E	KU
	LINE	LGAL	NO
12/31/10 balance	103	49	54
Accretion expense	4	2	2
Obligations assumed in acquisition of LKE	???	???	???
Obligations assumed in acquisition of CN	???	???	???
ARO derecognized	???	???	???
New obligations incurred	???	???	???
Changes in estimated cash flow or settlement date	7	4	3
Effect of foreign currency exchange rates	???	???	???
Obligations settled	???	???	???
09/30/11 balance	114	55	59_
Balance-sheet classification at 09/30/11:			
Current	1	1	???
Noncurrent	113	54	59_
Totals	114	55	59_
Balance-sheet classification at 12/31/10: Current			
Noncurrent	103	49	54
Totals	103	49	54

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

08/23/11 4:17 PM

	LKE	LG&E	KU
12/31/10 balance	103	49	54
Accretion expense Obligations assumed in acquisition of LKE Obligations assumed in acquisition of CN ARO derecognized New obligations incurred Changes in estimated cash flow or settlement date Effect of foreign currency exchange rates Obligations settled	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???
09/30/11 balance	103	49	54
Balance-sheet classification at 09/30/11: Current Noncurrent	??? ???	??? ???	??? ???
Totals	#VALUE!	#VALUE!	#VALUE!
Balance-sheet classification at 12/31/10: Current Noncurrent	103	49	54_
Totals	103	49	54_

Attachment to Response to KU AG-1 Question No. 201 Page 1057 of 2028 Charnas

# Clark, Ed

From:

Erskine, Greg

Sent: To: Tuesday, October 11, 2011 3:45 PM Crescente, Angela; Wiseman, Sara

Subject:

FW: ARO Footnote - 9/30/11

### Sara and Angela:

I've updated the ARO footnote in the 10-Q to reflect the information in the file attached to Angela's e-mail below. The Word document I've attached to this e-mail contains the current version of the ARO footnote from the 10-Q. This version of the footnote should reflect the information Angela gave me.

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The footnote also contains ARO information for other PPL companies. You can ignore that information if you like.

Thanks,

Greg



Doc1.docx

From: Crescente, Angela

Sent: Tuesday, October 11, 2011 3:26 PM

**To:** Erskine, Greg **Cc:** Wiseman, Sara

Subject: FW: ARO Footnote - 9/30/11

Greg:

Please see the attached ARO Footnote.



ARO Footnote 3rd Quarter.xlsx

Thanks, Angela

From: Erskine, Greg

Attachment to Response to KU AG-1 Question No. 201 Page 1058 of 2028 Charnas

Sent: Friday, October 07, 2011 2:51 PM

To: Crescente, Angela

Subject: FW: ARO Footnote - 9/30/11

#### Angela:

I mentioned below that the 9/30/11 noncurrent ARO liability balances (in millions) that you put into the attached file need to agree with the 9/30/11 noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets for LKE, LG&E and KU (in millions). I also mentioned that I didn't yet know the noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets, but I would know them on or near Monday, October 10, and that I would e-mail the balances to you when I knew them. Well, I know them now, and here they are:

LKE 113 LG&E 54 KU 59

Please make sure that the 9/30/11 noncurrent balances that you put into the attached file equal the above balances.

If you have any questions, let me know.

Thanks,

Greg

From: Erskine, Greg

Sent: Friday, September 30, 2011 10:38 AM

To: Crescente, Angela

Subject: ARO Footnote - 9/30/11

## Angela:

I need to get information from you to complete the LKE, LG&E and KU sections of the ARO footnote that will appear in the 9/30/11 PPL Form 10-Q. I've attached a file that shows the information I need. Can you replace the question marks in the file with amounts and return the file to me by Tuesday, October 11, please?

The file calls for a rollforward of the ARO liabilities for LKE, LG&E and KU for the nine months ended 6/30/11 (in millions). It also calls for a split of the 9/30/11 ARO liability balances between current and noncurrent for LKE, LG&E and KU (also in millions).

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Attachment to Response to KU AG-1 Question No. 201 Page 1059 of 2028 Charnas

Please do not change the descriptions that appear in column A in the file and please do not add any new rows. PPL came up with the descriptions, and we can't change them.

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I included the split between current and noncurrent we reported at 12/31/10 in the attached file for your reference.

Thanks,

Greg



Book7.xlsx

#### 16. Asset Retirement Obligations

(PPL, LKE, LG&E and KU)

Accretion expense recorded by LG&E and KU is offset with a regulatory asset, such that there is no income statement impact.

(PPL, PPL Energy Supply, LKE, LG&E and KU)

The changes in the carrying amounts of AROs were as follows.

			I	PPL				
	]	PPL	Energ	y Supply	 LKE	 LG&E		KU
ARO at December 31, 2010	\$	448	\$	345	\$ 103	\$ 49	\$	54
Accretion expense		16		12	4	2		2
Obligations assumed in acquisition of WPD								
Midlands (a)		43						
Derecognition (b)				(5)				
Changes in estimated cash flow or settlement date		(3)		(3)	7	4		3
Effect of foreign currency exchange rates		1						
Obligations settled		(6)		(6)			_	
ARO at September 30, 2011	\$	499	\$	343	\$ 114	\$ 55	\$	59

- (a) Obligations required under U.K. law related to treated wood poles, gas-filled switchgear and fluid-filled cables. See Note 8 for additional information on the acquisition.
- (b) Represents AROs derecognized as a result of PPL Energy Supply's distribution of its membership interest in PPL Global to PPL Energy Supply's parent, PPL Energy Funding. See Note ##ADD for additional information on the distribution.

The classification of AROs on the Balance Sheet was as follows.

			September 30, 201	11	
	PPL	PPL Energy Supply	LKE	LG&E	KU
Current portion (a) Long-term portion (b) Total	\$ 8 491 \$ 499	\$ 7 336 \$ 343	\$ 1 113 \$ 114	\$ 1 54 \$ 55	\$ 59 \$ 59
rotai	<u>\$ 477</u>		December 31, 201		<u> </u>
	PPL	PPL Energy Supply	LKE	LG&E	KU
Current portion (a) Long-term portion (b) Total	\$ 13 435 \$ 448	\$ 13 332 \$ 345	\$ 103 \$ 103	\$ 49 \$ 49	\$ 54 \$ 54

- (a) Included in "Other current liabilities."
- (b) Included in "Asset retirement obligations."

(PPL and PPL Energy Supply)

The most significant ARO recorded by PPL and PPL Energy Supply relates to the decommissioning of the Susquehanna nuclear plant. The accrued nuclear decommissioning obligation was \$281 million and \$270 million at September 30, 2011 and December 31, 2010, and is included in "Asset retirement obligations" on the Balance Sheets.

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# Attachment to Response to KU AG-1 Question No. 201 Page 1061 of 2028 Charnas

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

10/11/11 2:53 PM

	LKE	LG&E	KU
12/31/10 balance	103	49	54
Accretion expense Obligations assumed in acquisition of LKE Obligations assumed in acquisition of CN ARO derecognized New obligations incurred Changes in estimated cash flow or settlement date Effect of foreign currency exchange rates	4 ??? ??? ??? 7 ???	2 ??? ??? ??? ??? 4 ???	2 ??? ??? ??? 3 ???
Obligations settled	???	???	???
09/30/11 balance	114	55	59
Balance-sheet classification at 09/30/11: Current Noncurrent	1 113	1 54	??? 59
Totals	114	55	59
Balance-sheet classification at 12/31/10: Current Noncurrent	103	49	54
Totals	103	49	54

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

08/23/11 4:17 PM

	LKE	LG&E	KU
12/31/10 balance	103	49	54
Accretion expense Obligations assumed in acquisition of LKE Obligations assumed in acquisition of CN ARO derecognized New obligations incurred Changes in estimated cash flow or settlement date Effect of foreign currency exchange rates Obligations settled	??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???
09/30/11 balance	103	49	54
Balance-sheet classification at 09/30/11: Current Noncurrent	??? ???	??? ???	??? ???
Totals	#VALUE!	#VALUE!	#VALUE!
Balance-sheet classification at 12/31/10: Current Noncurrent	103	49	54_
Totals	103	49	54

Attachment to Response to KU AG-1 Question No. 201 Page 1063 of 2028 Charnas

## Clark, Ed

From:

Erskine, Greg

Sent:

Tuesday, October 11, 2011 3:27 PM

To:

Crescente, Angela

Subject:

RE: ARO Footnote - 9/30/11

Thanks, Angela.

Greg

From: Crescente, Angela

Sent: Tuesday, October 11, 2011 3:26 PM

**To:** Erskine, Greg **Cc:** Wiseman, Sara

Subject: FW: ARO Footnote - 9/30/11

Greg:

Please see the attached ARO Footnote.

<< File: ARO Footnote 3rd Quarter.xlsx >>

Thanks, Angela

From: Erskine, Greg

Sent: Friday, October 07, 2011 2:51 PM

To: Crescente, Angela

Subject: FW: ARO Footnote - 9/30/11

#### Angela:

I mentioned below that the 9/30/11 noncurrent ARO liability balances (in millions) that you put into the attached file need to agree with the 9/30/11 noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets for LKE, LG&E and KU (in millions). I also mentioned that I didn't yet know the noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets, but I would know them on or near Monday, October 10, and that I would e-mail the balances to you when I knew them. Well, I know them now, and here they are:

LKE

113

LG&E

54

KU

59

Please make sure that the 9/30/11 noncurrent balances that you put into the attached file equal the above balances.

If you have any questions, let me know.

Thanks,

Attachment to Response to KU AG-1 Question No. 201 Page 1064 of 2028 Charnas

Greg

From: Erskine, Greg

Sent: Friday, September 30, 2011 10:38 AM

To: Crescente, Angela

Subject: ARO Footnote - 9/30/11

Angela:

I need to get information from you to complete the LKE, LG&E and KU sections of the ARO footnote that will appear in the 9/30/11 PPL Form 10-Q. I've attached a file that shows the information I need. Can you replace the question marks in the file with amounts and return the file to me by Tuesday, October 11, please?

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Thanks,

Greg

<< File: Book7.xlsx >>

### Attachment to Response to KU AG-1 Question No. 201 Page 1065 of 2028 Charnas

# Clark, Ed

From:

Crescente, Angela

Sent:

Tuesday, October 11, 2011 3:26 PM

To: Cc: Erskine, Greg Wiseman, Sara

Subject:

FW: ARO Footnote - 9/30/11

Greg:

Please see the attached ARO Footnote.



ARO Footnote 3rd Quarter.xlsx

Thanks, Angela

From: Erskine, Greg

Sent: Friday, October 07, 2011 2:51 PM

To: Crescente, Angela

Subject: FW: ARO Footnote - 9/30/11

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LKE

113

LG&E KU 54 59

Please make sure that the 9/30/11 noncurrent balances that you put into the attached file equal the above balances.

If you have any questions, let me know.

Thanks,

Greg

From: Erskine, Greg

Sent: Friday, September 30, 2011 10:38 AM

To: Crescente, Angela

Subject: ARO Footnote - 9/30/11

Attachment to Response to KU AG-1 Question No. 201 Page 1066 of 2028 Charnas

#### Angela:

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Thanks,

Greg

Book7.xlsx

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

10/11/11 2:53 PM

	LKE	LG&E	KU
12/31/10 balance	103	49	54
Accretion expense Obligations assumed in acquisition of LKE Obligations assumed in acquisition of CN ARO derecognized New obligations incurred Changes in estimated cash flow or settlement date Effect of foreign currency exchange rates Obligations settled	4 ??? ??? ??? ??? 7 ???	2 ??? ??? ??? 4 ??? ???	2 ??? ??? ??? ??? 3 ???
09/30/11 balance	114	55	59
Balance-sheet classification at 09/30/11: Current Noncurrent	1 113	1 54	??? 59
Totals	114	55	59_
Balance-sheet classification at 12/31/10: Current Noncurrent	103	49	54
Totals	103	49	54

# Attachment to Response to KU AG-1 Question No. 201 Page 1068 of 2028 Charnas

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

08/23/11 4:17 PM

	LKE	LG&E	KU
12/31/10 balance	103	49	54
Accretion expense Obligations assumed in acquisition of LKE Obligations assumed in acquisition of CN ARO derecognized New obligations incurred Changes in estimated cash flow or settlement date Effect of foreign currency exchange rates Obligations settled	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???
09/30/11 balance	103	49	54
Balance-sheet classification at 09/30/11: Current Noncurrent	??? ???	??? ???	??? ???
Totals	#VALUE!	#VALUE!	#VALUE!
Balance-sheet classification at 12/31/10: Current Noncurrent	103	49	54
Totals	103	49	54

#### Attachment to Response to KU AG-1 Question No. 201 Page 1069 of 2028 Charnas

### Clark, Ed

From:

Erskine, Greg

Sent:

Friday, October 07, 2011 2:51 PM

To:

Crescente, Angela

Subject:

FW: ARO Footnote - 9/30/11

#### Angela:

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113

LG&E

54

KU

59

Please make sure that the 9/30/11 noncurrent balances that you put into the attached file equal the above balances.

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Greg

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Sent: Friday, September 30, 2011 10:38 AM

To: Crescente, Angela

Subject: ARO Footnote - 9/30/11

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Attachment to Response to KU AG-1 Question No. 201 Page 1070 of 2028

Charnas
Please do not change the beginning balances in the attached file. Also, please do not change any of the formulas l've put into the file. If you feel that you need to change the beginning balances or a formula, please contact me before you do anything.

Please do not change the descriptions that appear in column A in the file and please do not add any new rows. PPL came up with the descriptions, and we can't change them.

Some of the formulas in the attached file return #VALUE!. After you replace the question marks with the correct 9/30/11 amounts, the #VALUEIs should go away.

I included the split between current and noncurrent we reported at 12/31/10 in the attached file for your reference.

Thanks,

Greg



Book7.xlsx

# Attachment to Response to KU AG-1 Question No. 201 Page 1071 of 2028 Charnas

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

08/23/11 4:17 PM

	LKE	LG&E	KÜ
12/31/10 balance	103	49	54
Accretion expense Obligations assumed in acquisition of LKE Obligations assumed in acquisition of CN ARO derecognized New obligations incurred Changes in estimated cash flow or settlement date Effect of foreign currency exchange rates Obligations settled	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???
09/30/11 balance	103	49	54
Balance-sheet classification at 09/30/11: Current Noncurrent	??? ???	??? ???	??? ???
Totals	#VALUE!	#VALUE!	#VALUE!
Balance-sheet classification at 12/31/10: Current Noncurrent	103	49	54
Totals	103	49	54

Attachment to Response to KU AG-1 Question No. 201 Page 1072 of 2028 Charnas

#### Clark, Ed

From: Christopher.Holland@ey.com

**Sent:** Friday, October 07, 2011 10:22 AM

To: Crescente, Angela Subject: ARO Settlement Testing

Attachments: List of ARO settlements for 2011 - E&Y request.xlsx

### Angela,

As an engagement team, we have decided to test the ARO controls in two different ways. The first way, we have the support we need and can independently test. The second way will be a sample from the known ARO settlements in the year. I have selected five settlements (see attached for selections highlighted in yellow). For these, we would like to see the screen shot showing that the payments are set up in the right account but since the control also references the original AIP and the process of establishing the ARO, we are also going to want to see the original AIP for the 5 selections. Let me know if you have any difficulty gathering this support.

Thanks,

Chris



### Christopher J. Holland | Assurance

Ernst & Young LLP

400 West Market St Suite 2400, Louisville, KY 40202, United States of America

Office: (502) 585-1400 | Christopher.Holland@ey.com

Website: www.ey.com

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Project	Task	ARO
112767	CP ARO2010	MC Landfill
120578	CP RETIRE MAIN	GAS MAINS AND SERVICE ABANDONMENTS
122452	CP ASBESTOS	PRESTON CITY GATE
123187	CP AROTY3ASB2008	TY3 ASBESTOS
124001	CP ASBESTOS	GR3 ASBESTOS
124260	CP ASBESTOS	BR1 ASBESTOS
124380	CP ARO09-4AH-R	CR4 ASBESTOS
124380	CP ARO09-5BL-R	CR5 ASBESTOS
124380	CP ARO09-6BL-R	CR6 ASBESTOS
124798	CP ASBESTOS	MAGNOLIA 235120
124798	CP ASBESTOS	MAGNOLIA 235300
124798	CP ASBESTOS	MAGNOLIA 235600
124802	CP ASBESTOS	MULDRAUGH 235120
124802	CP ASBESTOS	MULDRAUGH 235300
124802	CP ASBESTOS	MULDRAUGH 235600
124831	CP PLUG WELL-CTR	Center GSF UGS (Wells)
124831	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)
124831	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)
124842	CP ASBESTOS	PRESTON CITY GATE
126057	CP ASBESTOS	BR2 ASBESTOS
126160	CP ASBESTOS	TY3 ASBESTOS
126421	CP PLUG WELL-CTR	Center GSF UGS (Wells)
126421	CP PLUG WELL-DRI	Doe Run GSF UGS (Wells)
126421	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)
126421	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)
126421	CP PLUG WELL-MUL	Muldraugh GSF UGS (Wells)
127259	CP ASBESTOS	BR1 ASBESTOS
127280	CP ARO ASBESTOS	MILL CREEK 2 ASB
127297	CP ASBESTOS	BR2 ASBESTOS
130720	CP ASBESTOS	MILL CREEK 1 ASB
AROMC0241	CP 1755793	MC Landfill
LSMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS
PMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS

Attachment to Response to KU AG-1 Question No. 201 Page 1074 of 2028 Charnas

# Clark, Ed

From:

Kinder, Debra

Sent:

Friday, October 07, 2011 9:14 AM

To:

Plant Support; Wacker, Diana jogilvie@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com; jdahlby@pwrplan.com;

Crescente, Angela

Subject:

RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE -

CLOSING ISSUE [ref:00D6KJDN.5006FE4Ma:ref]

#### Elizabeth,

Our concerns are why this happened with the set up of the ARO transition assets, how to prevent it from happening again and how to get the basis that was created on the Purchase Accounting depreciation ledger removed so depreciation will not be calculated next month. Our DEV instance will be refreshed this weekend if that will help with the research of these issues.

Thanks,

Deb

----Original Message----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Thursday, October 06, 2011 5:16 PM

To: Wacker, Diana

Cc: jogilvie@pwrplan.com; jholt@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com; Kinder, Debra;

Crescente, Angela

Subject: RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE [

ref:00D6KJDN.5006FE4Ma:ref]

Diana,

You will need to do a depr adjustment to remove the amount from the one set of books.

Thanks,

Elizabeth Cowart

----- Original Message ----

From: Wacker, Diana [Diana.Wacker@lge-ku.com]

Sent: 10/6/2011 4:20 PM To: support@pwrplan.com

Cc: <u>Debra.Kinder@lge-ku.com</u>; <u>Angela.Crescente@lge-ku.com</u>; <u>jogilvie@pwrplan.com</u>; <u>jdahlby@pwrplan.com</u>;

ihirschel@pwrplan.com; iholt@pwrplan.com

Subject: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE

All:

We have a Closing Issue. We set up Transition ARO's on both LGE and KU. Somehow these transition ARO's created a Purchase Accounting Depr Reserve Adjustment, which created entries for depreciation expense. It basically duplicated the financial set of books entry - the financial set of book entry is correct - BUT THE PURCHASE ACCOUNTING SET OF BOOKS IS NOT CORRECT.

Attachment to Response to KU AG-1 Question No. 201 Page 1075 of 2028

Charnas
There is a fictitious depr basis on the Purchase Accounting Set of Books, which created depreciation entries. I am sending screen shots of the Depr Ledger for the reserve activity for both sets of books.

This is in PRODUCTION only. Please let me know what other information I can provide to help you with getting this corrected.

Thanks, Diana Wacker 502-627-4054

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Thanks,

Elizabeth Cowart **PowerPlant Support** 770.937.3000 ref:00D6KJDN.5006FE4Ma:ref

### Attachment to Response to KU AG-1 Question No. 201 Page 1076 of 2028 Charnas

#### Clark, Ed

From: Sent:

Plant Support <support@pwrplan.com> Thursday, October 06, 2011 5:16 PM

To:

Wacker, Diana

Cc:

iogilvie@pwrplan.com; jholt@pwrplan.com; jhirschel@pwrplan.com; jdahlby@pwrplan.com;

Kinder, Debra; Crescente, Angela

Subject:

RE: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE -

CLOSING ISSUE [ref:00D6KJDN.5006FE4Ma:ref]

Diana,

You will need to do a depr adjustment to remove the amount from the one set of books.

Thanks,

Elizabeth Cowart

----- Original Message -----

From: Wacker, Diana [Diana.Wacker@lge-ku.com]

Sent: 10/6/2011 4:20 PM To: <u>support@pwrplan.com</u>

Cc: Debra.Kinder@lge-ku.com; Angela.Crescente@lge-ku.com; jogilvie@pwrplan.com; jdahlby@pwrplan.com;

jhirschel@pwrplan.com; jholt@pwrplan.com

Subject: Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE - CLOSING ISSUE

All:

We have a Closing Issue. We set up Transition ARO's on both LGE and KU. Somehow these transition ARO's created a Purchase Accounting Depr Reserve Adjustment, which created entries for depreciation expense. It basically duplicated the financial set of books entry - the financial set of book entry is correct - BUT THE PURCHASE ACCOUNTING SET OF BOOKS IS NOT CORRECT.

There is a fictitious depr basis on the Purchase Accounting Set of Books, which created depreciation entries. I am sending screen shots of the Depr Ledger for the reserve activity for both sets of books.

This is in PRODUCTION only. Please let me know what other information I can provide to help you with getting this corrected.

Thanks, Diana Wacker 502-627-4054

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Attachment to Response to KU AG-1 Question No. 201 Page 1077 of 2028 Charnas

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Thanks,

Elizabeth Cowart PowerPlant Support 770.937.3000 ref:00D6KJDN.5006FE4Ma:ref

Attachment to Response to KU AG-1 Question No. 201 Page 1078 of 2028 Charnas

# Clark, Ed

From:

Wacker, Diana

Sent:

Thursday, October 06, 2011 4:19 PM

To:

'Plant Support'

Cc:

Kinder, Debra; Crescente, Angela; jogilvie@pwrplan.com; 'Jim Dahlby'; 'Josh Hirschel';

'Joseph Holt'

Subject:

Transition ARO - PURCHASE ACCOUNTING SET OF BOOKS DEPRECIATION ISSUE -

**CLOSING ISSUE** 

#### All:

We have a Closing Issue. We set up Transition ARO's on both LGE and KU. Somehow these transition ARO's created a Purchase Accounting Depr Reserve Adjustment, which created entries for depreciation expense. It basically duplicated the financial set of books entry – the financial set of book entry is correct – BUT THE PURCHASE ACCOUNTING SET OF BOOKS IS NOT CORRECT.

There is a fictitious depr basis on the Purchase Accounting Set of Books, which created depreciation entries. I am sending screen shots of the Depr Ledger for the reserve activity for both sets of books.

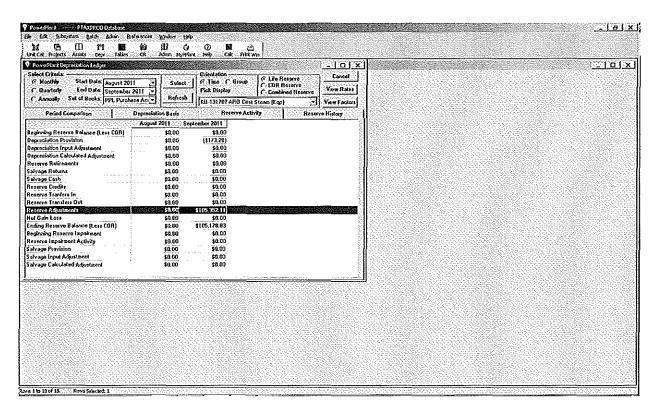
This is in PRODUCTION only. Please let me know what other information I can provide to help you with getting this corrected.

Thanks, Diana Wacker 502-627-4054



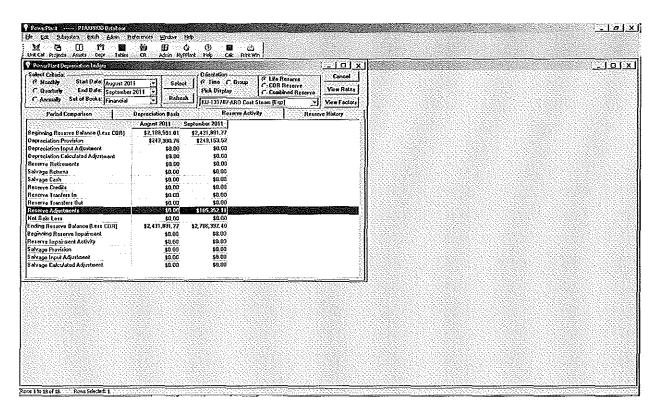
TRANSITION ARO DEPR ISSUE.doc...

Attachment to Response to KU AG-1 Question No. 201 Page 1079 of 2028 Charnas



PURCHASE ACCOUNTING SET OF BOOKS

Attachment to Response to KU AG-1 Question No. 201 Page 1080 of 2028 Charnas



FINANCIAL SET OF BOOKS

Attachment to Response to KU AG-1 Question No. 201 Page 1081 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Thursday, October 06, 2011 3:15 PM

To:

Wiseman, Sara; Crescente, Angela

Subject:

RE: Revised EAM for AROs

Below is the only additional change from Valerie, I will save a clean version to the acctrestricted drive distribute a clean version momentarily!

### Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Scott, Valerie

Sent: Thursday, October 06, 2011 2:31 PM

To: Charnas, Shannon

Subject: RE: Revised EAM for AROs

In the SOX paragraph (right before the disclosure paragraph) can we add a sentence: "The error occurred due to the misunderstanding of what gas main miles were included in the ARO calculation." Right before "Management believes....."

I am good with the other changes.

Valerie

From: Charnas, Shannon

Sent: Thursday, October 06, 2011 12:19 PM

To: Scott, Valerie

Subject: RE: Revised EAM for AROs

Sorry, this includes the attachment. << File: EAM - ARO (TC2 Joint Use and Gas Trans) 10-6-11.docx >>

# Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Charnas, Shannon

**Sent:** Thursday, October 06, 2011 12:04 PM

**To:** Scott, Valerie

Subject: RE: Revised EAM for AROs

Valerie -

Attached are some revisions that I believe address your questions. Let me know if it would be helpful to discuss. If you are OK with the changes, I will clean up the notes before distributing and saving a final version.

Thanks,

# Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Scott, Valerie

Sent: Wednesday, October 05, 2011 7:38 PM

To: Charnas, Shannon

Subject: RE: Revised EAM for AROs

Shannon,

I have added some comments in the attached. Let me know if we should discuss.

<< File: EAM - ARO (TC2 Joint Use and Gas Trans) 10-5-11.docx >>

Valerie

From: Charnas, Shannon

Sent: Wednesday, October 05, 2011 4:03 PM

To: Scott, Valerie

Subject: Revised EAM for AROs

Valerie -

Let me know if you have any comments or would like to discuss.

Thanks, << File: EAM - ARO (TC2 Joint Use and Gas Trans) 10-5-11.docx >>

#### Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

Attachment to Response to KU AG-1 Question No. 201 Page 1083 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Wednesday, October 05, 2011 8:46 PM Wiseman, Sara; Crescente, Angela

To: Subject:

RE: Revised EAM for AROs

Sorry, meant to include something else. If you could try to complete Thursday morning, that would be helpful. Once we get Valerie through it again we need to give it to Mimi – she has a reporting deadline to PPL of tomorrow to provide details from the EAM regarding quarter end.

Thanks,

### Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Charnas, Shannon

**Sent:** Wednesday, October 05, 2011 8:45 PM **To:** Wiseman, Sara; Crescente, Angela **Subject:** FW: Revised EAM for AROs

Sara & Angela -

Can you work on addressing Valerie's comments. Let me know if there is anything we should discuss.

Thanks,

### Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Scott, Valerie

Sent: Wednesday, October 05, 2011 7:38 PM

To: Charnas, Shannon

Subject: RE: Revised EAM for AROs

Shannon,

I have added some comments in the attached. Let me know if we should discuss.

<< File: EAM - ARO (TC2 Joint Use and Gas Trans) 10-5-11.docx >>

Valerie

Attachment to Response to KU AG-1 Question No. 201 Page 1084 of 2028 Charnas

From: Charnas, Shannon

Sent: Wednesday, October 05, 2011 4:03 PM

**To:** Scott, Valerie

Subject: Revised EAM for AROs

Valerie -

Let me know if you have any comments or would like to discuss.

Thanks, << File: EAM - ARO (TC2 Joint Use and Gas Trans) 10-5-11.docx >>

# Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

Attachment to Response to KU AG-1 Question No. 201 Page 1085 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Wednesday, October 05, 2011 4:01 PM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

RE: ARO TC 2 Joint Use & Gas Transmission 10-5-11.docx

Looks good, I will forward a clean version to Valerie. Thanks for the quick turnaround on the addition of the gas mains for Trans.

# Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Wednesday, October 05, 2011 3:40 PM

To: Charnas, Shannon Cc: Crescente, Angela

Subject: ARO TC 2 Joint Use & Gas Transmission 10-5-11.docx

<< File: ARO TC 2 Joint Use & Gas Transmission 10-5-11.docx >>

Shannon: Here is the latest draft.

Attachment to Response to KU AG-1 Question No. 201 Page 1086 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Tuesday, October 04, 2011 12:46 PM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

RE: Trimble County 2 Joint Use ARO 10-3-11 tracked #2.docx

Sara -

Thanks. Yes, I will remove the green highlighted portion. I mentioned the overall issues to Valerie and told her I would be sending her a draft today. She wasn't very concerned about any of it. I'll let you know as I hear back from her, I will send her the draft very shortly.

### Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Tuesday, October 04, 2011 12:42 PM

To: Charnas, Shannon Cc: Crescente, Angela

Subject: Trimble County 2 Joint Use ARO 10-3-11 tracked #2.docx

<< File: Trimble County 2 Joint Use ARO 10-3-11 tracked #2.docx >>

Attached is the latest draft. I've inserted the table (thanks to Debbie H.) and added the proposed language that we discussed. Also, talked to Dan about the debt covenant and changed the response on that. Should the part that is still highlighted in green be removed?

Attachment to Response to KU AG-1 Question No. 201 Page 1087 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Monday, October 03, 2011 4:57 PM

To:

Wiseman, Sara Crescente, Angela

Cc: Subject:

RE: Trimble County 2 Joint Use ARO 10 3 11.docx

Sorry, still going. One thing I wanted to mention is that we just this afternoon made changes to the error assessment memo template – it is on the accounting policies drive. There are a few adjustments that need to be made to your memo to accommodate these changes. Can someone begin looking at that?

## Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Monday, October 03, 2011 4:54 PM

**To:** Charnas, Shannon **Cc:** Crescente, Angela

Subject: Trimble County 2 Joint Use ARO 10 3 11.docx

<< File: Trimble County 2 Joint Use ARO 10 3 11.docx >>

Shannon: Here is the memo with the journal entry numbers.

Attachment to Response to KU AG-1 Question No. 201 Page 1088 of 2028 Charnas

### Clark, Ed

From:

Plant Support <support@pwrplan.com> Monday, October 03, 2011 11:33 AM

Sent: To:

Crescente, Angela

Cc:

Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

RE: ARO Asset Life [ref:00D6KJDN.5006FDOhF:ref]

Hi Angela,

Below is what I received from Josh.

The date on the ARO details screen doesn't ever change. If you change the depreciable life on the layer screen the remaining life on CPR depr will change after ARO processing runs for the first month the layer was posted.

Thanks,

Elizabeth Cowart

----- Original Message -----

From: Crescente, Angela [Angela.Crescente@lge-ku.com]

Sent: 9/30/2011 6:13 PM To: <a href="mailto:support@pwrplan.com">support@pwrplan.com</a>

Cc: Sara.Wiseman@lge-ku.com; Diana.Wacker@lge-ku.com; Debra.Kinder@lge-ku.com

Subject: RE: ARO Asset Life [ ref:00D6KJDN.5006FDOhF:ref ]

Thanks Elizabeth.

From: Plant Support [mailto:support@pwrplan.com]

Sent: Friday, September 30, 2011 6:11 PM

To: Crescente, Angela

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Asset Life [ ref:00D6KJDN.5006FDOhF:ref ]

Hi Angela,

I've sent your question to someone in our ARO group. I will let you know when I have a response.

Elizabeth

----- Original Message ----

From: Crescente, Angela [Angela.Crescente@lge-ku.com]

Sent: 9/30/2011 5:53 PM
To: support@pwrplan.com

Cc: Diana, Wacker@lge-ku.com; Debra.Kinder@lge-ku.com; Sara.Wiseman@lge-ku.com

Subject: ARO Asset Life

Support,

I am revaluing an ARO asset and noticed that when I change the end of life date on the layer, it does not change the end of life date on the details screen so it appears that depreciation is trying to calculate on the original life. Looking through the "help" feature, it states that the date should change automatically when you update the date on the new

Attachment to Response to KU AG-1 Question No. 201 Page 1089 of 2028 Charnas

layer. Please let me know if I have done everything correctly or if I am missing something. I have attached screenshots for your reference.

I need to be able to correct this for quarter ended September close.

Thanks, Angela

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Thanks,

Elizabeth Cowart PowerPlant Support 770.937.3000

ref:00D6KJDN.5006FDOhF:ref

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Thanks,

Elizabeth Cowart PowerPlant Support 770.937.3000 Attachment to Response to KU AG-1 Question No. 201 Page 1090 of 2028 Charnas

# Clark, Ed

From:

Daly, Karen

Sent:

Monday, October 03, 2011 10:50 AM

To: Cc: Kinder, Debra Crescente, Angela

Subject:

RE: New Depr Group - ARO

Thank you,

From: Kinder, Debra

Sent: Monday, October 03, 2011 10:49 AM

**To:** Daly, Karen **Cc:** Crescente, Angela

Subject: RE: New Depr Group - ARO

LGE-236807-ARO Cost Gas Trans (Eqp)

Here you go.

From: Daly, Karen

**Sent:** Monday, October 03, 2011 10:17 AM **To:** Kinder, Debra; Crescente, Angela **Subject:** New Depr Group - ARO

Did the new ARO depr group get added? If so, can I get the information (or a screen shot) so that I can add it to the plant reports? Thanks!

### Karen L. Daly

Accounting Analyst III Property Accounting Phone: (502) 627-4279

e-mail: Karen Daly@lge-ku.com

Attachment to Response to KU AG-1 Question No. 201 Page 1091 of 2028 Charnas

# Clark, Ed

From:

Kinder, Debra

Sent:

Monday, October 03, 2011 10:49 AM

To: Cc: Daly, Karen Crescente, Angela

Subject:

RE: New Depr Group - ARO

LGE-236807-ARO Cost Gas Trans (Eqp)

Here you go.

From: Daly, Karen

Sent: Monday, October 03, 2011 10:17 AM
To: Kinder, Debra; Crescente, Angela
Subject: New Depr Group - ARO

Did the new ARO depr group get added? If so, can I get the information (or a screen shot) so that I can add it to the plant reports? Thanks!

## Karen L. Daly

Accounting Analyst III Property Accounting Phone: (502) 627-4279

e-mail: Karen.Daly@lge-ku.com

Attachment to Response to KU AG-1 Question No. 201 Page 1092 of 2028 Charnas

## Clark, Ed

From:

Daly, Karen

Sent:

Monday, October 03, 2011 10:17 AM Kinder, Debra; Crescente, Angela

To: Subject:

New Depr Group - ARO

Did the new ARO depr group get added? If so, can I get the information (or a screen shot) so that I can add it to the plant reports? Thanks!

## Karen L. Daly

Accounting Analyst III Property Accounting Phone: (502) 627-4279

e-mail: Karen.Daly@lge-ku.com

#### Attachment to Response to KU AG-1 Question No. 201 Page 1093 of 2028 Charnas

### Clark, Ed

From:

Plant Support <support@pwrplan.com> Friday, September 30, 2011 6:11 PM

Sent: To:

Crescente, Angela

Cc:

Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

RE: ARO Asset Life [ref;00D6KJDN.5006FDOhF:ref]

Hi Angela,

I've sent your question to someone in our ARO group. I will let you know when I have a response.

Elizabeth

----- Original Message -----

From: Crescente, Angela [Angela.Crescente@lge-ku.com]

Sent: 9/30/2011 5:53 PM To: support@pwrplan.com

Cc: Diana.Wacker@lge-ku.com; Debra.Kinder@lge-ku.com; Sara.Wiseman@lge-ku.com

Subject: ARO Asset Life

Support,

I am revaluing an ARO asset and noticed that when I change the end of life date on the layer, it does not change the end of life date on the details screen so it appears that depreciation is trying to calculate on the original life. Looking through the "help" feature, it states that the date should change automatically when you update the date on the new layer. Please let me know if I have done everything correctly or if I am missing something. I have attached screenshots for your reference.

I need to be able to correct this for quarter ended September close.

Thanks, Angela

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Thanks,

Elizabeth Cowart PowerPlant Support 770.937.3000

Attachment to Response to KU AG-1 Question No. 201 Page 1094 of 2028 Charnas

### Clark, Ed

From: Crescente, Angela

Friday, September 30, 2011 5:53 PM 'Plant Support' Sent:

To:

Wacker, Diana; Kinder, Debra; Wiseman, Sara Cc:

ARO Asset Life Subject:

#### Support,

I am revaluing an ARO asset and noticed that when I change the end of life date on the layer, it does not change the end of life date on the details screen so it appears that depreciation is trying to calculate on the original life. Looking through the "help" feature, it states that the date should change automatically when you update the date on the new layer. Please let me know if I have done everything correctly or if I am missing something. I have attached screenshots for your reference.

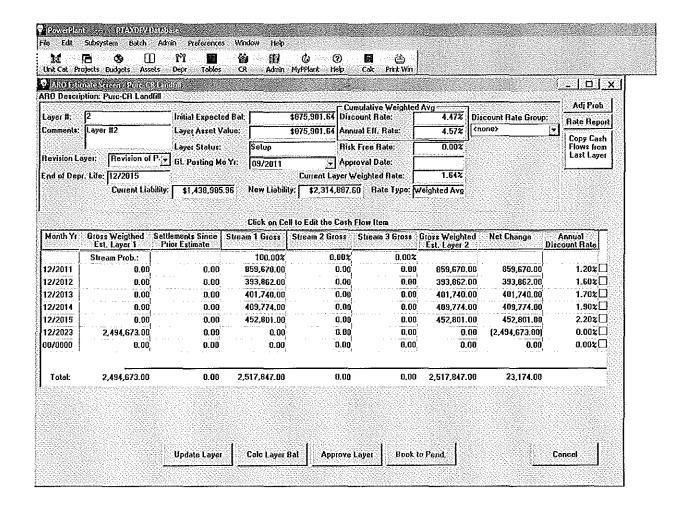
I need to be able to correct this for quarter ended September close.



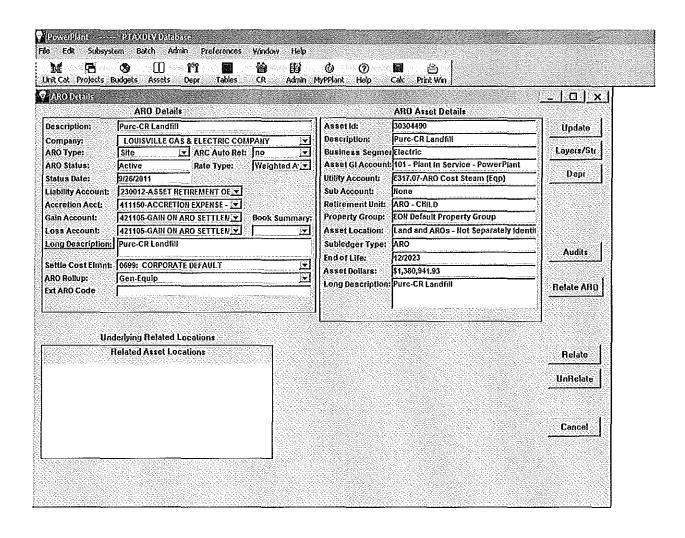
ARO Depr Date Change - Suppo...

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1095 of 2028 Charnas



Attachment to Response to KU AG-1 Question No. 201 Page 1096 of 2028 Charnas



Attachment to Response to KU AG-1 Question No. 201 Page 1097 of 2028 Charnas

## Clark, Ed

From:

Crescente, Angela

Sent:

Friday, September 30, 2011 5:33 PM

To:

'Plant Support'; Wacker, Diana; Duce, John; Richardson, Ralph

Cc:

jogilvie@pwrplan.com

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDIoM:ref]

Tracking:

Recipient

Read

'Plant Support' Wacker, Diana Duce, John

Richardson, Ralph

Read: 9/30/2011 5:45 PM

jogilvie@pwrplan.com

Yes, it is the same Post error. Please keep in mind that these entries must be posted for quarter ended September close so let us know what we can do to help.

Thank you for helping us,

Angela

----Original Message-----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Friday, September 30, 2011 5:26 PM

To: Wacker, Diana; Duce, John; Richardson, Ralph; Crescente, Angela

Cc: jogilvie@pwrplan.com

Subject: RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ ref:00D6KJDN.5006FDIoM:ref ]

Is it still the same Post 300 error? Elizabeth is connected looking at another issue right now. I'll get connected first thing on Monday to look at the data again.

Attachment to Response to KU AG-1 Question No. 201 Page 1098 of 2028 Charnas

# Clark, Ed

From:

Plant Support <support@pwrplan.com> Friday, September 30, 2011 5:26 PM

Sent: To:

Cc:

Wacker, Diana; Duce, John; Richardson, Ralph; Crescente, Angela jogilvie@pwrplan.com

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

Is it still the same Post 300 error? Elizabeth is connected looking at another issue right now. I'll get connected first thing on Monday to look at the data again.

Attachment to Response to KU AG-1 Question No. 201 Page 1099 of 2028 Charnas

## Clark, Ed

From:

Crescente, Angela

Sent:

Friday, September 30, 2011 5:21 PM

To:

'Plant Support'; Wacker, Diana; Richardson, Ralph; Duce, John

Cc:

jogilvie@pwrplan.com

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

Tracking:

Recipient

Read

'Plant Support' Wacker, Diana

Richardson, Ralph

Read: 9/30/2011 5:26 PM

Duce, John

jogilvie@pwrplan.com

### Joseph,

I added them, but it is still failing. I have attached a screenshot in case I didn't add them the way you wanted me to. Please let me know.

Charnas

PowerPlant Journal Entry Configuration				
Company Id	Trans Type	Time Stamp	User Id	Je Method Id
All Companies	Life reserve transfer credit(1019)	2/28/2011 19:09:3	PWRPLANT	Purchase Accting Post Ac
All Companies	Life reserve transfer debit(1018)	2/28/2011 19:09:3	PWRPLANT	Purchase Accting Post Ac
All Companies	Reserve Transfer Credit	2/28/2011 19:09:3	PWBPLANT	Purchase Accting Post Ac
All Companies	Reserve Transfer Debit	2/28/2011 19:09:3	PWRPLANT	Purchase Accting Post Ac
All Companies	Retirement Credit (1010)	2/28/2011 19:09:3	PWRPLANT	Purchase Accting Post Ac
All Companies	Retirement Debit (1080)	2/28/2011 19:09:3	PWRPLANT	Purchase Accting Post Ac
All Companies	Transfer From (Credit)	2/28/2011 19:09:3	PWRPLANT	Purchase Accting Post Ac
All Companies	Transfer To (Debit)	2/28/2011 19:09:3	PWRPLANT	Purchase Accting Post Ac
All Companies	Tax Expense Credit	1/26/2011 22:14:4	PWRPLANT	Tax Expensing
All Companies	Tax Expense Debit	1/26/2011 22:14:4	PWRPLANT	Tax Expensing
IGNORE Entry	ARO addition credit(1017)	9/30/2011 17:14:4	E009595	Purchase Acct - FERC Re
IGNORE Entry	ARO addition debit(1016)	9/30/2011 17:14:5	E009595	Purchase Acct - FERC Re
LG&E and KU Services Co	r Addition Credit (1070)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re
LG&E and KU Services Co	Addition Debit (1010/1060)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re
LG&E and KU Services Co	Life reserve transfer credit(1019)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re
LG&E and KU Services Co	Life reserve transfer debit(1018)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re
LG&E and KU Services Co	Retirement Credit (1010)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re
LG&E and KU Services Co	Retirement Debit (1080)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re
LG&E and KU Services Co	r Transfer From (Credit)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re
LG&E and KU Services Co	r Transfer To (Debit)	5/26/2011 18:25:2	PWRPLANT	Purchase Acct - FERC Re

Key Word Values from f\_autogen\_je\_account gl\_co - gl company no from company acct - external gl account wo\_num - work order number ce - external cost element ext\_dp - external depr group value fp\_num - funding project number

Key Word Values from pp\_gl\_transaction —
gl\_co - gl company no from company
wo\_num - work order number
ext\_dp - external depr group value
acct - external gl account from pend trans
cwip - external gl acct for wo cwip acct
rwip - external gl acct for wo removal acct
saly - external gl acct for wo saly acct

resv - external gl acct for de cor\_rs - external gl acct for d gn\_ls - external gl acct for de ic\_pay - external gl acct for p ic\_rec - external gl acct for p ic\_co - gl comp no for inter c fn\_num - funding project num

Thanks, Angela

----Original Message----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Friday, September 30, 2011 4:54 PM

To: Wacker, Diana; Richardson, Ralph; Duce, John Cc: jogilvie@pwrplan.com; Crescente, Angela

Subject: RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ ref:00D6KJDN.5006FDIOM:ref ]

Can you try adding an "Ignore" line for "Purchase Acct - FERC Reversal" for 1016/1017 (ARO Addition Debit/Credit). Even though these shouldn't have purchase accounting amounts, it runs through all of the corresponding set of books.

Joseph King PowerPlant Support 770.937.3000

ref:00D6KJDN.5006FDIoM:ref

Attachment to Response to KU AG-1 Question No. 201 Page 1101 of 2028 Charnas

## Clark, Ed

From:

Plant Support <support@pwrplan.com>

Sent:

Friday, September 30, 2011 4:54 PM

To:

Wacker, Diana; Richardson, Ralph; Duce, John

Cc:

jogilvie@pwrplan.com; Crescente, Angela

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

Can you try adding an "Ignore" line for "Purchase Acct - FERC Reversal" for 1016/1017 (ARO Addition Debit/Credit). Even though these shouldn't have purchase accounting amounts, it runs through all of the corresponding set of books.

#### Clark, Ed

From:

Plant Support <support@pwrplan.com>

Sent:

Friday, September 30, 2011 4:39 PM

To:

Wacker, Diana; Duce, John; Richardson, Ralph

Cc:

jogilvie@pwrplan.com; Crescente, Angela

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDIoM:ref]

Looks good -- that got me in. I'll have an update shortly.

----- Original Message

From: Duce, John [John.Duce@lge-ku.com]

Sent: 9/30/2011 4:16 PM
To: support@pwrplan.com;
Diana.Wacker@lge-ku.com;
Ralph.Richardson@lge-ku.com

Cc: jogilvie@pwrplan.com; Angela.Crescente@lge-ku.com

Subject: RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

Started PB on 170.119.21.125, you should be good to go now.

John

----Original Message----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Friday, September 30, 2011 4:04 PM

To: Wacker, Diana; Duce, John; Richardson, Ralph Cc: jogilvie@pwrplan.com; Crescente, Angela

Subject: RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDIoM:ref]

Diana,

I just tried to get connected to look but both 170.119.21.125 and 170.119.21.124 appear to be having Powerbuilder license issues so I can't get in to investigate.

John/Ralph, can one of you log into those PCs (call me if you need login information) and start Powerbuilder please?

Joseph King PowerPlant Support 770.937.3000 ref:00D6KJDN.5006FDIoM:ref

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Attachment to Response to KU AG-1 Question No. 201 Page 1103 of 2028 Charnas

Joseph King PowerPlant Support 770.937.3000

### Attachment to Response to KU AG-1 Question No. 201 Page 1104 of 2028 Charnas

## Clark, Ed

From:

Duce, John

Sent:

Friday, September 30, 2011 4:15 PM

To:

Plant Support; Wacker, Diana; Richardson, Ralph

Cc:

jogilvie@pwrplan.com; Crescente, Angela

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

Started PB on 170.119.21.125, you should be good to go now.

John

----Original Message----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Friday, September 30, 2011 4:04 PM

To: Wacker, Diana; Duce, John; Richardson, Ralph Cc: jogilvie@pwrplan.com; Crescente, Angela

Subject: RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ ref:00D6KJDN.5006FDloM:ref ]

Diana,

I just tried to get connected to look but both 170.119.21.125 and 170.119.21.124 appear to be having Powerbuilder license issues so I can't get in to investigate.

John/Ralph, can one of you log into those PCs (call me if you need login information) and start Powerbuilder please?

### Attachment to Response to KU AG-1 Question No. 201 Page 1105 of 2028 Charnas

## Clark, Ed

From:

Duce, John

Sent:

Friday, September 30, 2011 4:07 PM

To:

Plant Support; Wacker, Diana; Richardson, Ralph

Cc:

jogilvie@pwrplan.com; Crescente, Angela

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

I'll log into .125, be just a few minutes.

----Original Message-----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Friday, September 30, 2011 4:04 PM

To: Wacker, Diana; Duce, John; Richardson, Ralph Cc: jogilvie@pwrplan.com; Crescente, Angela

Subject: RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ ref:00D6KJDN.5006FDIoM:ref ]

Diana,

I just tried to get connected to look but both 170.119.21.125 and 170.119.21.124 appear to be having Powerbuilder license issues so I can't get in to investigate.

John/Ralph, can one of you log into those PCs (call me if you need login information) and start Powerbuilder please?

Attachment to Response to KU AG-1 Question No. 201 Page 1106 of 2028 Charnas

# Clark, Ed

From:

Plant Support <support@pwrplan.com>

Sent:

Friday, September 30, 2011 4:04 PM

To:

Wacker, Diana; Duce, John; Richardson, Ralph

Cc:

jogilvie@pwrplan.com; Crescente, Angela

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

Diana,

I just tried to get connected to look but both 170.119.21.125 and 170.119.21.124 appear to be having Powerbuilder license issues so I can't get in to investigate.

John/Ralph, can one of you log into those PCs (call me if you need login information) and start Powerbuilder please?

### Clark, Ed

From:

Wacker, Diana

Sent:

Friday, September 30, 2011 3:05 PM

To:

Plant Support

Cc:

jogilvie@pwrplan.com; Crescente, Angela

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDIoM:ref]

Joseph: Any luck figuring out why we are getting this post error? Thanks, Diana

----Original Message-----

From: Plant Support [mailto:support@pwrplan.com]

Sent: Friday, September 30, 2011 10:51 AM

To: Wacker, Diana

Cc: jogilvie@pwrplan.com; Crescente, Angela

Subject: RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ ref:00D6KJDN.5006FDIoM:ref ]

Diana, I'll connect in a few minutes to take a look.

----- Original Message -----

From: Wacker, Diana [Diana.Wacker@lge-ku.com]

Sent: 9/30/2011 10:20 AM To: <a href="mailto:support@pwrplan.com">support@pwrplan.com</a>

Cc: jogilvie@pwrplan.com; Angela.Crescente@lge-ku.com Subject: Post Error 300 - - ARO Revaluation - DEV/PROD -

### Support/Jim:

We are doing some ARO Revaluations for September close. Because this is such a big deal, we are testing in DEV. We have a Post 300 Error: No record found in the PP\_Journal\_Layouts for trans\_type=1016. We did this last year with no post problems, but are now having post issues. We must get this posted quickly, and during close.

I am attaching a screen shot of the PP Journal Layout Table showing a line for 'all companies' for this transaction type 1016 - what are we missing?

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Joseph King PowerPlant Support Attachment to Response to KU AG-1 Question No. 201 Page 1108 of 2028 Charnas

770.937.3000 ref:00D6KJDN.5006FDIoM:ref

Attachment to Response to KU AG-1 Question No. 201 Page 1109 of 2028 Charnas

### Clark, Ed

From:

Plant Support <support@pwrplan.com> Friday, September 30, 2011 10:51 AM

Sent: To:

Wacker, Diana

Cc:

jogilvie@pwrplan.com; Crescente, Angela

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDIoM:ref]

Diana, I'll connect in a few minutes to take a look.

------ Original Message ------

From: Wacker, Diana [Diana.Wacker@lge-ku.com]

Sent: 9/30/2011 10:20 AM To: support@pwrplan.com

Cc: jogilvie@pwrplan.com; Angela.Crescente@lge-ku.com Subject: Post Error 300 - - ARO Revaluation - DEV/PROD -

Support/Jim:

We are doing some ARO Revaluations for September close. Because this is such a big deal, we are testing in DEV. We have a Post 300 Error: No record found in the PP\_Journal\_Layouts for trans\_type=1016. We did this last year with no post problems, but are now having post issues. We must get this posted quickly, and during close.

I am attaching a screen shot of the PP Journal Layout Table showing a line for 'all companies' for this transaction type 1016 - what are we missing?

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Attachment to Response to KU AG-1 Question No. 201 Page 1110 of 2028 Charnas

## Clark, Ed

From:

Erskine, Greg

Sent:

Friday, September 30, 2011 10:38 AM

To: Subject: Crescente, Angela ARO Footnote - 9/30/11

Angela:

I need to get information from you to complete the LKE, LG&E and KU sections of the ARO footnote that will appear in the 9/30/11 PPL Form 10-Q. I've attached a file that shows the information I need. Can you replace the question marks in the file with amounts and return the file to me by Tuesday, October 11, please?

The file calls for a rollforward of the ARO liabilities for LKE, LG&E and KU for the nine months ended 6/30/11 (in millions). It also calls for a split of the 9/30/11 ARO liability balances between current and noncurrent for LKE, LG&E and KU (also in millions).

The 9/30/11 noncurrent ARO liability balances (in millions) that you put into the attached file need to agree with the 9/30/11 noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets for LKE, LG&E and KU (in millions). I don't yet know the noncurrent ARO liability balances that will appear in the 9/30/11 balance sheets, but I should know them on or near Monday, October 10. I will e-mail the balances to you when I know them. Please make sure that the 9/30/11 noncurrent balances that you put into the attached file equal the balances that I e-mail to you.

Please do not change the beginning balances in the attached file. Also, please do not change any of the formulas I've put into the file. If you feel that you need to change the beginning balances or a formula, please contact me before you do anything.

Please do not change the descriptions that appear in column A in the file and please do not add any new rows. PPL came up with the descriptions, and we can't change them.

Some of the formulas in the attached file return #VALUE!. After you replace the question marks with the correct 9/30/11 amounts, the #VALUEIs should go away.

I included the split between current and noncurrent we reported at 12/31/10 in the attached file for your reference.

Thanks,

Greg

Book7.xlsx

# Attachment to Response to KU AG-1 Question No. 201 Page 1111 of 2028 Charnas

LKE CONSOLIDATED
Asset Retirement Obligations
9ME 09/30/11
09/30/11 Reporting

08/23/11 4:17 PM

	LKE	LG&E	KU
12/31/10 balance	103	49	54
Accretion expense Obligations assumed in acquisition of LKE Obligations assumed in acquisition of CN ARO derecognized New obligations incurred Changes in estimated cash flow or settlement date Effect of foreign currency exchange rates Obligations settled	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???	??? ??? ??? ??? ??? ??? ???
09/30/11 balance	103	49	54_
Balance-sheet classification at 09/30/11: Current Noncurrent	??? ???	??? ???	??? ???
Totals	#VALUE!	#VALUE!	#VALUE!
Balance-sheet classification at 12/31/10: Current Noncurrent	103	49	54
Totals	103	49	54

### Attachment to Response to KU AG-1 Question No. 201 Page 1112 of 2028 Charnas

# Clark, Ed

From:

Plant Support <support@pwrplan.com>

Sent:

Saturday, October 01, 2011 10:40 PM

To:

Wacker, Diana; Duce, John; Richardson, Ralph; Crescente, Angela

Cc:

jogilvie@pwrplan.com

Subject:

RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDIoM:ref]

I tried to run post in debug mode myself but it keeps crashing so I'll have to get with the post developer on Monday.

That said, manually debugging, it looks like we need to add a line for 1016 and 1017 for JE Method "Purch Acct". That's the only one it's still erroring for when I tried.

Attachment to Response to KU AG-1 Question No. 201 Page 1113 of 2028 Charnas

## Clark, Ed

From:

Sent:

To:

Plant Support <support@pwrplan.com> Saturday, October 01, 2011 9:02 PM Wacker, Diana; Richardson, Ralph; Duce, John; Crescente, Angela

Cc:

Subject:

jogilvie@pwrplan.com RE: Post Error 300 - - ARO Revaluation - DEV/PROD - [ref:00D6KJDN.5006FDloM:ref]

Can you run post in debug mode and send me the output?

Attachment to Response to KU AG-1 Question No. 201 Page 1114 of 2028 Charnas

# Clark, Ed

From: Wacker, Diana

Sent: Friday, September 30, 2011 10:19 AM

To: Plant Support

Cc: jogilvie@pwrplan.com; Crescente, Angela

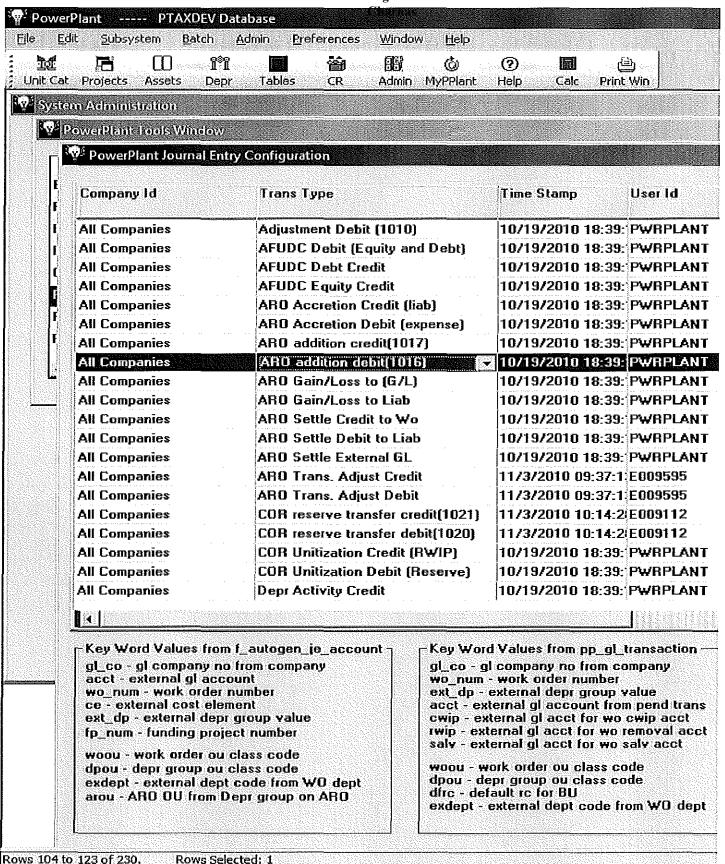
Subject: Post Error 300 - - ARO Revaluation - DEV/PROD -

Importance: High

### Support/Jim:

We are doing some ARO Revaluations for September close. Because this is such a big deal, we are testing in DEV. We have a Post 300 Error: No record found in the PP\_Journal\_Layouts for trans\_type=1016. We did this last year with no post problems, but are now having post issues. We must get this posted quickly, and during close.

I am attaching a screen shot of the PP Journal Layout Table showing a line for 'all companies' for this transaction type 1016 – what are we missing?



Attachment to Response to KU AG-1 Question No. 201 Page 1116 of 2028 Charnas

# Clark, Ed

From:

Sent:

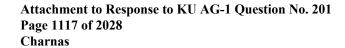
To:

Subject:

Wiseman, Sara Thursday, September 29, 2011 1:03 PM Crescente, Angela Trimble County 2 Joint Use ARO KU.docx



Trimble County 2 Joint Use ARO...





#### **MEMORANDUM**

Date:

October 3, 2011

To:

Valerie L. Scott, Controller

From:

Sara Wiseman, Manager, Property Accounting

Angela Crescente, Accounting Analyst III, Property Accounting

Re:

Trimble County 2 Joint Use Asset Retirement Obligations

cc:

Shannon Charnas, Director, Accounting & Regulatory Reporting

Debbie Shelton, Director, Audit Services

Mimi Kelly, Manager, Sarbanes-Oxley Compliance Lesley Pienaar, Manager, Financial Reporting

Ernst & Young

Erik Rander, Director, Shared Accounting Services

#### Overview of Error

During September 2011, it was discovered that asset retirement obligations (AROs) should have been established on the financial records of Kentucky Utilities Companies (KU) for certain joint use assets used at Trimble County Unit 2 (TC 2). TC 2 became operational in January 2011 and it was at that time that the related AROs should have been established.

The joint use assets for which the AROs should have been established on KU are jointly owned with Louisville Gas and Electric Company (LG&E). An ARO had been appropriately established on LG&E's financial records for these assets. However, at the time when TC 2 became operational (January 2011), LG&E's ARO liability should have been reduced by KU's ownership share and an equal liability should have been established on KU's financial records.

The root cause of the error was due to human error.

This error caused the following misstatements on KU's financial statements:

Regulated Utility Plant Understated
Accumulated Depreciation Understated
Regulatory Assets Understated
Asset Retirement Obligations Understated

This error caused the following misstatements on LG&E's financial statements:

Attachment to Response to KU AG-1 Question No. 201 Page 1118 of 2028 Charnas

October 3, 2011

Page 2

Trimble County 2 Joint Use Asset Retirement Obligations

Overstated
Overstated
Overstated
Overstated

On a consolidated basis, there is no impact as the addition of AROs on KU's financial records is offset by the reduction on LG&E's.

Narrative containing a general description and cause of the error/change, including high-level background of the process where the error/change occurred and when the error was detected of the change made (i.e., month and year). This section should include **Description**, **Root Cause** and **Issue Implication** from *Appendix B - Guidance for reporting Sarbanes-Oxley (SOX) Issues in Materiality Memos* 

#### How Error Was Identified

While reviewing ARO reports during account reconciliation preparation for period of August 2011, an Accounting Analyst realized that AROs should have been established on KU's financial records for the joint use assets associated with TC 2.

Narrative containing a general description of how and when the error was identified (i.e., "In analysis of the June activity an error was identified in the way ..." or "While reconciling the XXX account for the month of April it was determined that ...."

### **Controls Impacted**

Narrative indicating the controls impacted (i.e., "The error was attributable to failure of controls surrounding key spreadsheets ..."), the plan to mitigate future risk of the error occurring, and affirmation that Sarbanes-Oxley documentation has been updated for the change in processes. This section should include Issue Classification, Reason for Classification, Compensating Control Number(s), Action Plan, Evidence Requirements, and Date to Implement from Appendix B - Guidance for reporting Sarbanes-Oxley (SOX) Issues in Materiality Memos.

Periods Impacted (including quarter correction booked)

Year/Quarter	Q1	Q2	Q3	Q4
2011	X	X		
2010				
2009				

Adjustment to Amounts Reported on Financial Statements - US GAAP (000's)

Attachment to Response to KU AG-1 Question No. 201 Page 1119 of 2028 Charnas

October 3, 2011 Page 3

Trimble County 2 Joint Use Asset Retirement Obligations

	_	6ME 06/30/11		
Fin Stmt Line Item	<u>Company</u>	<u>Debit</u>	Credit	
	LG&E	<u> </u>		
Copy entry(les) into this space	LG&E			
	LG&E			
Asset Retirement Obligations	LG&E			
	KU			
Copy entry(les) into this space	KU			
	KU			
Asset Retirement Obligations	KU			

In this situation, a waived adjustment was not entered into the waived adjustment file; there was no waived adjustment in the current period (Q3 2011) since the balance sheet was corrected when the above entry was recorded in September 2011 on the general ledger. The adjustment was discovered in September, which was too late to be included in the June 2011 waived adjustment file.

NOTE: If the adjustment creates a financial statement error of greater than 5% of any financial statement line item, other than income taxes, in the current reporting period, complete Appendix C, Accounting Issue Deficiency Analysis, for assessment of the error under the Sarbanes-Oxley Act of 2002.

### Attachment to Response to KU AG-1 Question No. 201 Page 1120 of 2028 Charnas

### Clark, Ed

From:

Leenerts, Patricia

Sent:

Tuesday, September 27, 2011 1:11 PM

To: Cc: Crescente, Angela Wiseman, Sara

Subject:

RE: ARO revaluation

Angela, I had some gas transmission main activity in September. I added and retired some gas transmission mains on project 131377. Also, Diana did a minor add on project 125684, for September, on a gas transmission main asset.

Thanks,

Pat

502-627-3811

From: Wiseman, Sara

Sent: Tuesday, September 27, 2011 12:46 PM

To: Clark, Ed; Clark, Lynda; Crescente, Angela; Daly, Karen; Griffin, Sharon; Kinder, Debra; Kuntz, John; Leenerts,

Patricia; Riggs, Eric; Rose, Bruce; Wacker, Diana

Subject: ARO revaluation

Hi all:

Just wanted to let you know that Angela will be revaluing some AROs for the quarter close:

- 1. Revaluing the Mill Creek and Cane Run AROs due to a change in the retirement dates and a changes in the \$ estimate.
- 2. Establishing AROs related to TC joint use assets on KU. A similar reduction will be made on LGE's books.
- 3. Establishing an ARO for cut, cap and purge of gas transmission mains.

The accounts impacted with be 101, 108, 230, and 182.

Overall, we expect LGE's 230 account to increase \$1 million. KU's 230 account may increase by about \$4 million.

We will be working up some journal entries to illustrate what is being recorded in the PowerPlant system. Please let us know if you are interested in receiving a copy of them. Please see either Angela or me if you have questions.

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886

Attachment to Response to KU AG-1 Question No. 201 Page 1121 of 2028 Charnas

## Clark, Ed

From:

Wiseman, Sara

Sent:

Tuesday, September 27, 2011 12:46 PM

To:

Clark, Ed; Clark, Lynda; Crescente, Angela; Daly, Karen; Griffin, Sharon; Kinder, Debra;

Kuntz, John; Leenerts, Patricia; Riggs, Eric; Rose, Bruce; Wacker, Diana

Subject:

ARO revaluation

Hi all:

Just wanted to let you know that Angela will be revaluing some AROs for the quarter close:

- 1. Revaluing the Mill Creek and Cane Run AROs due to a change in the retirement dates and a changes in the \$ estimate.
- 2. Establishing AROs related to TC joint use assets on KU. A similar reduction will be made on LGE's books.
- 3. Establishing an ARO for cut, cap and purge of gas transmission mains.

The accounts impacted with be 101, 108, 230, and 182.

Overall, we expect LGE's 230 account to increase \$1 million. KU's 230 account may increase by about \$4 million.

We will be working up some journal entries to illustrate what is being recorded in the PowerPlant system. Please let us know if you are interested in receiving a copy of them. Please see either Angela or me if you have questions.

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886

Attachment to Response to KU AG-1 Question No. 201 Page 1122 of 2028 Charnas

### Clark, Ed

From:

Wiseman, Sara

Sent:

Tuesday, September 27, 2011 12:33 PM

To:

Crescente, Angela

Subject:

Please review ARO revaluation for Q3 For Prop Acct dept

Hi all:

Just wanted to let you know that Angela will be revaluing some AROs for the quarter close:

- 1. Revaluing the Mill Creek and Cane Run AROs due to a change in the retirement dates and a changes in the \$ estimate.
- 2. Establishing AROs related to TC joint use assets on KU. A similar reduction will be made on LGE's books.
- 3. Establishing an ARO for cut, cap and purge of gas transmission mains.

The accounts impacted with be 101, 108, 230, and 182.

Overall, we expect little change in terms of \$\$ to LGE's 230 account. KU's 230 account may increase by about \$5 million.

We will be working up some journal entries to illustrate what is being recorded in the PowerPlant system. Please let us know if you are interested in receiving a copy of them. Please see either Angela or me if you have questions.

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886 Attachment to Response to KU AG-1 Question No. 201 Page 1123 of 2028 Charnas

# Clark, Ed

From: Sent:

PowerPlantAlerts@lge-ku.com Wednesday, September 21, 2011 5:59 AM Crescente, Angela PowerPlant Alerts - LGE-KU - AIP - ARO

To:

Subject:

Project 124309 has ARO

## Attachment to Response to KU AG-1 Question No. 201 Page 1124 of 2028 Charnas

Clark, Ed

From: Wacker, Diana

Sent:

To:

Tuesday, September 20, 2011 7:19 AM Crescente, Angela FW: PowerPlant Alerts - LGE-KU - AIP - ARO Subject:

Angela: This is a breaker replacement – is there something I should do for you on this? Diana

From: PowerPlantAlerts@lge-ku.com [mailto:PowerPlantAlerts@lge-ku.com]

Sent: Tuesday, September 20, 2011 5:59 AM

To: Wacker, Diana

Subject: PowerPlant Alerts - LGE-KU - AIP - ARO

Project 135598 has ARO

Attachment to Response to KU AG-1 Question No. 201 Page 1125 of 2028 Charnas

# Clark, Ed

From:

Sent:

PowerPlantAlerts@lge-ku.com Tuesday, September 20, 2011 5:59 AM Crescente, Angela PowerPlant Alerts - LGE-KU - AIP - ARO To: Subject:

Project 135598 has ARO

Attachment to Response to KU AG-1 Question No. 201 Page 1126 of 2028 Charnas

# Clark, Ed

From:

Allen, Lisa

Sent:

Monday, September 19, 2011 10:57 AM

To:

Sundheimer, Glenn; Wiseman, Sara; Crescente, Angela

Subject:

RE: ARO Quarterly Questionnaire.docx

Sara/Angela,

Please disregard this. I will consolidate all ED results and provide 1 response to you for ED in total.

Glenn,

Last quarter you mentioned some wells being drilled.....We will be drilling two new wells in the Doe Run Storage Facility, KY in the 3<sup>rd</sup> quarter 2011 and possibly between three and twelve wells in the Center Gas Storage Field. Is that not applicable anymore since you answered No or did you just not indicate it since we answered it last time?

Lisa

From: Sundheimer, Glenn

**Sent:** Monday, September 19, 2011 10:35 AM **To:** Wiseman, Sara; Crescente, Angela; Allen, Lisa **Subject:** ARO Quarterly Questionnaire.docx

<< File: ARO Quarterly Questionnaire.docx >>

Attachment to Response to KU AG-1 Question No. 201 Page 1127 of 2028 Charnas

# Clark, Ed

From:

Sent:

To:

Sundheimer, Glenn Monday, September 19, 2011 10:35 AM Wiseman, Sara; Crescente, Angela; Allen, Lisa ARO Quarterly Questionnaire.docx

Subject:



ARO Quarterly Questionnaire.d... Attachment to Response to KU AG-1 Question No. 201 Page 1128 of 2028 Charnas

## **ARO Quarterly Questionnaire**

Please answer the following questions for the period since the date of your last completed questionnaire.

1. To the best of your knowledge, are you aware of any changes that would impact the valuation of the asset retirement obligations ("AROs") that have been identified? Such changes may include changes in laws, statutes, regulations, precedents set by the Company, contracts, permits, certificates of need, right of way agreements, market costs or available resources for remediation, or planned retirements. (Please list)

Answer: No, I am not aware of any changes.

2. To the best of your knowledge, are you aware of any acquired assets, land, or leases that will create an ARO? (Please list, include location)

Answer: I am not aware of any acquired assets, land, or leases that will create an ARO.

3. To the best of your knowledge, are you aware of any new construction that will create an ARO? (Please list, include location)

Answer: No.

Answer: No.

4. In certain very limited circumstances the Company could be determined to be obligated to retire an asset or a group of assets based upon a commitment made to a third party. Are you aware of any communications either written or verbal between representatives of LKE and third parties with respect to retirement of an asset or a group of assets owned by LKE at the end of operations or a specific point in time? If so, please list the identities of the LKE representatives and assets involved, as well as the third party or parties who were involved and the context in which the discussions took place.

Completed by: \_\_\_Glenn
Sundheimer\_\_\_\_

For the quarter ended: \_\_\_\_September
2011\_\_\_\_

Attachment to Response to KU AG-1 Question No. 201 Page 1129 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Monday, September 12, 2011 11:44 AM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

RE: ARO Quarterly Questionnaire.docx

Makes sense, go ahead.

# Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Sunday, September 11, 2011 8:16 PM

To: Charnas, Shannon Cc: Crescente, Angela

Subject: ARO Quarterly Questionnaire.docx

<< File: ARO Quarterly Questionnaire.docx >>

Shannon: Attached is the ARO questionnaire we want to send out for the third quarter. The yellow highlighted parts are what has been added. Additionally, we just made it one questionnaire instead of 2, like it is in the policy. We added the yellow parts based on suggestions from the field. If you are OK with it, please let us know so we can get it sent out. Also, the policy will need to be updated.

Thanks,

Sara and Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1130 of 2028 Charnas

# Clark, Ed

From:

Wiseman, Sara

Sent:

Sunday, September 11, 2011 8:16 PM

To: Cc: Charnas, Shannon Crescente, Angela

Subject:

ARO Quarterly Questionnaire.docx



Shannon: Attached is the ARO questionnaire we want to send out for the third quarter. The yellow highlighted parts are what has been added. Additionally, we just made it one questionnaire instead of 2, like it is in the policy. We added the yellow parts based on suggestions from the field. If you are OK with it, please let us know so we can get it sent out. Also, the policy will need to be updated.

Thanks,

Sara and Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1131 of 2028 Charnas

# **ARO Quarterly Questionnaire**

Please answer the following questions for the period since the date of your last completed questionnaire.

1. To the best of your knowledge, are you aware of any changes that would impact the valuation of the asset retirement obligations ("AROs") that have been identified? Such changes may include changes in laws, statutes, regulations, precedents set by the Company, contracts, permits, certificates of need, right of way agreements, market costs or available resources for remediation, or planned retirements. (Please list)

#### Answer:

2. To the best of your knowledge, are you aware of any acquired assets, land, or leases that will create an ARO? (Please list, include location)

#### Answer:

3. To the best of your knowledge, are you aware of any new construction that will create an ARO? (Please list, include location)

#### Answer:

4. In certain very limited circumstances the Company could be determined to be obligated to retire an asset or a group of assets based upon a commitment made to a third party. Are you aware of any communications either written or verbal between representatives of LKE and third parties with respect to retirement of an asset or a group of assets owned by LKE at the end of operations or a specific point in time? If so, please list the identities of the LKE representatives and assets involved, as well as the third party or parties who were involved and the context in which the discussions took place.

Answer:			
Completed by:			
For the quarter ended:			

#### Attachment to Response to KU AG-1 Question No. 201 Page 1132 of 2028 Charnas

## Clark, Ed

From:

Leenerts, Patricia

Sent:

Thursday, August 25, 2011 8:52 AM

To:

Crescente, Angela

Subject:

FW: ARO comments on LSMR414, PMR414 and MAN414 project retirements

I should have requested verification that I need to move all the pipe retirements to 108799 for the retirement tasks on this project? I believe that you don't care if I combine them all onto one task or not? If you want to setup a task for me...all the work was downtown. If you want me to set it up, just let me know (remind me though is it setup in Oracle or PP?).

Thanks,

Pat

502-627-3811

From: Leenerts, Patricia

Sent: Thursday, August 25, 2011 8:47 AM

To: Crescente, Angela

Subject: ARO comments on LSMR414, PMR414 and MAN414 project retirements

Angela, I think that you will find the last email, from the stream attached, from Paul Stratman interesting in each of these emails.

M

N.

Re: Project MAN414 RE: Project MAN414

#### Attachment to Response to KU AG-1 Question No. 201 Page 1133 of 2028 Charnas

### Clark, Ed

From:

Stratman, Paul

Sent: To: Monday, May 16, 2011 5:56 PM Leenerts, Patricia; Singleton, Janna

Cc:

Murphy, Kevin

Subject:

Re: Project MAN414

The Dresser 31s are the cap part of that whole "cut, cap and purge" discussion that keeps coming up.

From my Blackberry device, please excuse any typos.

From: Leenerts, Patricia

Sent: Monday, May 16, 2011 05:14 PM

To: Singleton, Janna

Cc: Stratman, Paul; Murphy, Kevin Subject: FW: Project MAN414

Janna, You indicated below that JEs were needed for the tasks I questioned. Please let me know when you planned on sending me the approved up-loaded JE. I need it by end of day on May 24<sup>th</sup>, to still allow me to be able to unitize this project for May and be able to ask questions at that time if questions still remain. As you can tell by the email stream it was intended for me to process this project in April, so I really need to get it unitized in May if possible.

JE needed to transfer charges on the following tasks:

JEF13INV to JEF13RET

ALIINV to MUHALINST

LIB6THINV to GEN419G as O&M

In addition, I am not finding unitizable material charged to the following tasks:

1STBRDINV

**6THMARINV** 

**CHESTINV** 

**JEF8THINV** 

Go ahead and process necessary JEs for these items, depending on your research on the 4 above tasks. If you want to drop me a quick note as to what you plan, that might be helpful. I can review prior to you investing the time for creating the JE if you like.

Also, tasks BROJEFRET, what are '18" Dresser style 31 Line Cap for NATURAL GAS use'? If these are unitizable material then shouldn't they be on the investment task.

Thanks,

Pat

502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1134 of 2028 Charnas

From: Singleton, Janna

Sent: Wednesday, April 27, 2011 5:07 PM

To: Leenerts, Patricia

Cc: Stratman, Paul; Murphy, Kevin; Singleton, Janna

Subject: FW: Project MAN414

Pat,

See answers below, in red.

Janna



Think Green! Before printing this e-mail, ask the question, is it necessary?

From: Leenerts, Patricia

Sent: Wednesday, April 20, 2011 4:36 PM

**To:** Stratman, Paul **Cc:** Murphy, Kevin

Subject: RE: Project MAN414

Paul, the name of the project is ELECTRIC/GAS MANHOLE CONFLICTS with a description of "Eliminate gas main conflicts with 15 electric manholes in downtown Louisville by replacing approximately 12,300-feet of distribution mains and the associated services." This description does not indicate to me what type of work was done, except that to me replacing means putting new in where old used to be. Maybe that isn't what this project is about as you indicate that there is cut, cap and purge.

Please See attached <<2010 Leak Mitigation Manhole summary to PA 04 28 2011 edited KPM.pdf>>

How do I know what the associated services are to retire for 6THMARRET and JEF13THRET?

Actually, can you tell me what was installed for those same 2 task? For 6THMARRET I only see reducer pipe and fittings...no unitizable material shown for \$100,000 of investment costs, although there is a reference to coldpatch tickets. Maybe the coldpatch ticket detail will provide me the asset information which I need.

All service work for this project was billed to MUHALCOM, MUHALCUST. For the tasks above we capped and retired pipe. Downtown is expensive. Coldpatch is used for road restoration after installation, repair, retirement or maintenance of gas assets. We don't put cold patch on the pipe.

I do not find any material on the JEF13INV, so I believe that the \$2,392.64 of charges need to be moved to O&M. If the JEF13THRET did not retire capital items then the \$640 charges would also need to be moved to O&M.

Retirements only – transfer all \$ to retirement.

I do not find any material on the ALIINV, so I believe that the \$1,204.15 of charges need to be moved to O&M.

Initial task set up; xfer all \$ to MUHALINST as this was the actual task used.

I do not find any material on the LIB6THINV, so I believe that the \$4,038.95 of charges need to be moved to O&M.

Verified main in manhole was inactive and retired - xfer to GEN419G as O&M

# Attachment to Response to KU AG-1 Question No. 201 Page 1135 of 2028

I guess that there is a chance that the pipe was left over from **sitothers**project, in which case I would need to know, by task, footage, size and material so that I can add these dollars as fixed assets.

#### None

When you say gas facility, what does that mean in the case of this blanket?

Pipe, valve, fitting

From: Stratman, Paul

Sent: Wednesday, April 20, 2011 3:13 PM

**To:** Leenerts, Patricia **Cc:** Murphy, Kevin

Subject: RE: Project MAN414

Yes, these are cut, cap and purge retirements.

It is impossible to retire a gas facility without a cut, cap and purge operation. Without such an operation, gas would continually leak out into the atmosphere.

From: Leenerts, Patricia

Sent: Wednesday, April 20, 2011 2:44 PM

**To:** Stratman, Paul **Subject:** Project MAN414

Paul, is this blanket your responsibility?

Could retirements have cut, cap and purge? I have 2 tasks in particular that I'm trying to work... 6THMARRET and JEF13THINV.

If you could let me know by April 27, I would appreciate it...if not your project, please let me know so that I can forward to correct person and still get the answer by Apr 27.

Thanks,

Pat 502-627-3811

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#### Attachment to Response to KU AG-1 Question No. 201 Page 1136 of 2028 Charnas

## Clark, Ed

From:

Stratman, Paul

Sent:

Monday, May 09, 2011 4:10 PM

To:

Singleton, Janna; Leenerts, Patricia Murphy, Kevin; Crescente, Angela

Cc: Subject:

RE: Project MAN414

For all LSMR414, PMR414 and MAN414 retirements, the pipe is cut, capped, purged and abandoned in place (left in the ground to rot away for all eternity).

Miles and miles of it.

From: Singleton, Janna

**Sent:** Monday, May 09, 2011 4:07 PM To: Leenerts, Patricia; Stratman, Paul Cc: Murphy, Kevin; Crescente, Angela

Subject: RE: Project MAN414

Pat,

Just to clarify and prevent further emails...

Is your question - Did the tasks 6THMARRET and JEF13THINV have cut, cap and purge associated with them in which the pipe remained in the ground without gas flowing through it; therefore, making them ARO retirements?

#### Janna



Think Green! Before printing this e-mail, ask the question, is it necessary?

From: Leenerts, Patricia

Sent: Monday, May 09, 2011 4:00 PM

To: Stratman, Paul

Cc: Murphy, Kevin; Singleton, Janna; Crescente, Angela

Subject: RE: Project MAN414

Paul, I did not define my question clearly. I am attempting to determine if the retirements involved on this (and any gas) project would be an ARO retirement. The ARO retirement is defined by cut, cap and purge, but also includes the retired pipe to be left in the ground without active flow of gas. I will refer to this as ARO retirements, if that is helpful for the future. I'm hoping to reduce confusion in the future from my questions, so if there is better terminology then let me know.

I believe that pipe is cut, cap and purged either temporarily or permanently so that work may be performed on the pipe. If you cut, cap and purge a pipe and then T into it to reroute, this would not be an ARO or even a regular retirement. The section of pipe which has been left in the ground, without gas flowing through it, would be the ARO (108799) retirement. If a section of pipe is retired and removed from the ground, then the cost associated with this type of retirement would be a normal 108901 retirement.

Thanks,

Attachment to Response to KU AG-1 Question No. 201 Page 1137 of 2028 Charnas

Pat 502-627-3811

From: Stratman, Paul

Sent: Wednesday, April 20, 2011 3:13 PM

**To:** Leenerts, Patricia **Cc:** Murphy, Kevin

Subject: RE: Project MAN414

Yes, these are cut, cap and purge retirements.

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From: Leenerts, Patricia

Sent: Wednesday, April 20, 2011 2:44 PM

To: Stratman, Paul

Subject: Project MAN414

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If you could let me know by April 27, I would appreciate it...if not your project, please let me know so that I can forward to correct person and still get the answer by Apr 27.

Thanks,

Pat 502-627-3811

## Attachment to Response to KU AG-1 Question No. 201 Page 1138 of 2028 Charnas

Clark, Ed

From:

Leenerts, Patricia

Sent:

Thursday, August 25, 2011 8:47 AM

To:

Crescente, Angela

Subject:

ARO comments on LSMR414, PMR414 and MAN414 project retirements

Angela, I think that you will find the last email, from the stream attached, from Paul Stratman interesting in each of these emails.

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Re: Project MAN414 RE: Project MAN414

#### Attachment to Response to KU AG-1 Question No. 201 Page 1139 of 2028 Charnas

#### Clark, Ed

From:

Stratman, Paul

Sent:

Monday, May 16, 2011 5:56 PM

To:

Leenerts, Patricia; Singleton, Janna

Cc: Subject: Murphy, Kevin Re: Project MAN414

The Dresser 31s are the cap part of that whole "cut, cap and purge" discussion that keeps coming up.

From my Blackberry device, please excuse any typos.

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Sent: Monday, May 16, 2011 05:14 PM

To: Singleton, Janna

**Cc**: Stratman, Paul; Murphy, Kevin **Subject**: FW: Project MAN414

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Thanks,

Pat

502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1140 of 2028 Charnas

From: Singleton, Janna

Sent: Wednesday, April 27, 2011 5:07 PM

To: Leenerts, Patricia

Cc: Stratman, Paul; Murphy, Kevin; Singleton, Janna

Subject: FW: Project MAN414

Pat,

See answers below, in red.

Janna



Think Green! Before printing this e-mail, ask the question, is it necessary?

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To: Stratman, Paul Cc: Murphy, Kevin

Subject: RE: Project MAN414

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# Attachment to Response to KU AG-1 Question No. 201 Page 1141 of 2028

I guess that there is a chance that the pipe was left over from another project, in which case I would need to know, by task, footage, size and material so that I can add these dollars as fixed assets.

None

When you say gas facility, what does that mean in the case of this blanket?

Pipe, valve, fitting

From: Stratman, Paul

Sent: Wednesday, April 20, 2011 3:13 PM

**To:** Leenerts, Patricia **Cc:** Murphy, Kevin

Subject: RE: Project MAN414

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Sent: Wednesday, April 20, 2011 2:44 PM

To: Stratman, Paul Subject: Project MAN414

Paul, is this blanket your responsibility?

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Thanks,

Pat 502-627-3811

#### Attachment to Response to KU AG-1 Question No. 201 Page 1142 of 2028 Charnas

## Clark, Ed

From:

Stratman, Paul

Sent:

Monday, May 09, 2011 4:10 PM

To:

Singleton, Janna; Leenerts, Patricia Murphy, Kevin; Crescente, Angela

Cc: Subject:

RE: Project MAN414

For all LSMR414, PMR414 and MAN414 retirements, the pipe is cut, capped, purged and abandoned in place (left in the ground to rot away for all eternity).

Miles and miles of it.

From: Singleton, Janna

Sent: Monday, May 09, 2011 4:07 PM To: Leenerts, Patricia; Stratman, Paul Cc: Murphy, Kevin; Crescente, Angela

Subject: RE: Project MAN414

Pat,

Just to clarify and prevent further emails...

Is your question - Did the tasks 6THMARRET and JEF13THINV have cut, cap and purge associated with them in which the pipe remained in the ground without gas flowing through it; therefore, making them ARO retirements?

#### Tanna



Think Green! Before printing this e-mail, ask the question, is it necessary?

From: Leenerts, Patricia

Sent: Monday, May 09, 2011 4:00 PM

To: Stratman, Paul

Cc: Murphy, Kevin; Singleton, Janna; Crescente, Angela

Subject: RE: Project MAN414

Paul, I did not define my question clearly. I am attempting to determine if the retirements involved on this (and any gas) project would be an ARO retirement. The ARO retirement is defined by cut, cap and purge, but also includes the retired pipe to be left in the ground without active flow of gas. I will refer to this as ARO retirements, if that is helpful for the future. I'm hoping to reduce confusion in the future from my questions, so if there is better terminology then let me know.

I believe that pipe is cut, cap and purged either temporarily or permanently so that work may be performed on the pipe. If you cut, cap and purge a pipe and then T into it to reroute, this would not be an ARO or even a regular retirement. The section of pipe which has been left in the ground, without gas flowing through it, would be the ARO (108799) retirement. If a section of pipe is retired and removed from the ground, then the cost associated with this type of retirement would be a normal 108901 retirement.

Thanks,

Attachment to Response to KU AG-1 Question No. 201 Page 1143 of 2028 Charnas

Pat 502-627-3811

From: Stratman, Paul

Sent: Wednesday, April 20, 2011 3:13 PM

To: Leenerts, Patricia Cc: Murphy, Kevin

Subject: RE: Project MAN414

Yes, these are cut, cap and purge retirements.

It is impossible to retire a gas facility without a cut, cap and purge operation. Without such an operation, gas would continually leak out into the atmosphere.

From: Leenerts, Patricia

Sent: Wednesday, April 20, 2011 2:44 PM

To: Stratman, Paul

Subject: Project MAN414

Paul, is this blanket your responsibility?

Could retirements have cut, cap and purge? I have 2 tasks in particular that I'm trying to work... 6THMARRET and JEF13THINV.

If you could let me know by April 27, I would appreciate it...if not your project, please let me know so that I can forward to correct person and still get the answer by Apr 27.

Thanks,

Pat 502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1144 of 2028 Charnas

# Clark, Ed

From:

Kehdy, Angele

Sent: To: Wednesday, August 24, 2011 8:36 AM

Subject:

Crescente, Angela ARO Reg Asset

Angela,

I am looking for the journal entry that is booked for the amortization of the ARO reg asset and Megan Kuhl said that you are the one who gives her the numbers. Do you have time today to show me the journal entry that is done?

Let me know.

Thank you,

Angela Derjani Kehdy Financial Planning and Controlling LG&E and KU Energy Services (502) 627-3940

Attachment to Response to KU AG-1 Question No. 201 Page 1145 of 2028 Charnas

# Clark, Ed

From:

Dowdell, Richard

Sent:

Tuesday, August 23, 2011 3:58 PM

To: Subject: Crescente, Angela ARO Settlement Review

Angela – The list below has my selections for the ARO settlement review for SOX control 040.01.10. I'd like to see how they were handled, the calculations, etc. I'm not sure exactly what documentation you will have, so we can discuss it if you like. Let me know what time you will be able to discuss the samples.



C.2.10 - FI11S040 - 4-18-2011....

Thanks, Rich Attachment to Response to KU AG-1 Question No. 201 Page 1146 of 2028 Charnas

LG&E and KU Energy LLC
Audit Services Department
SOX Controls Testing - Cycle 040 Fixed Assets
FI11S040
C.2.10 - ARO Settlements Review
2011

**Auditor RHD** 

The list of assets with ARO activity settled between January and July 2010 was supplied by Angela Crescente - Accounting Analyst with Property Accounting. While none of the assets were disposed of, the assets were replaced with other ARO assets. The term settlement is defined as a replacement of one asset for another similar asset and not the complete removal of an entire asset.

Project	Task	Description
122452	CP ASBESTOS	PRESTON CITY GATE
124380	CP ARO09-4AH-R	CR4 ASBESTOS
124380	CP ARO09-5BL-R	CR5 ASBESTOS
124380	CP ARO09-6BL-R	CR6 ASBESTOS
124842	CP ASBESTOS	PRESTON CITY GATE
126160	CP ASBESTOS	TY3 ASBESTOS
127280	CP ARO ASBESTOS	MILL CREEK 2 ASB
AROMC0241	CP 1755793	MC Landfill

Project	Task	ARO	Population
112767	CP ARO2010	MC Landfill	1
120578	CP RETIRE MAIN	GAS MAINS AND SERVICE ABANDONMENTS	2
122452	CP ASBESTOS	PRESTON CITY GATE	3
123187	CP AROTY3ASB2008	TY3 ASBESTOS	4
124001	CP ASBESTOS	GR3 ASBESTOS	5
124260	CP ASBESTOS	BR1 ASBESTOS	6
124380	CP ARO09-4AH-R	CR4 ASBESTOS	7
124380	CP ARO09-5BL-R	CR5 ASBESTOS	8
124380	CP ARO09-6BL-R	CR6 ASBESTOS	9
124798	CP ASBESTOS	MAGNOLIA 235120	10
124798	CP ASBESTOS	MAGNOLIA 235300	11
124798	CP ASBESTOS	MAGNOLIA 235600	12
124802	CP ASBESTOS	MULDRAUGH 235120	13
124802	CP ASBESTOS	MULDRAUGH 235300	14
124802	CP ASBESTOS	MULDRAUGH 235600	15
124831	CP PLUG WELL-CTR	Center GSF UGS (Wells)	16
124831	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)	17
124831	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)	18
124842	CP ASBESTOS	PRESTON CITY GATE	19
126057	CP ASBESTOS	BR2 ASBESTOS	20
126160	CP ASBESTOS	TY3 ASBESTOS	21
126421	CP PLUG WELL-CTR	Center GSF UGS (Wells)	22
126421	CP PLUG WELL-DRI	Doe Run GSF UGS (Wells)	23
126421	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)	24
126421	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)	25
126421	CP PLUG WELL-MUL	Muldraugh GSF UGS (Wells)	26
127259	CP ASBESTOS	BR1 ASBESTOS	27
127280	CP ARO ASBESTOS	MILL CREEK 2 ASB	28
127297	CP ASBESTOS	BR2 ASBESTOS	29
130720	CP ASBESTOS	MILL CREEK 1 ASB	30
AROMC0241	CP 1755793	MC Landfill	31
LSMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS	32
PMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS	33

Attachment to Response to KU AG-1 Question No. 201 Page 1148 of 2028 Charnas

# Clark, Ed

From:

Wiseman, Sara

Sent:

Monday, August 22, 2011 5:04 PM Crescente, Angela

To: Subject:

ARO reval issues

A few other items we need to consider:

CSAPR—a disclosure in the Q The impact of the upcoming life assessment study SCR catalyst and need for an ARO.

We need to have some numbers and be able to meet with Shannon hopefully by mid September.

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886

Attachment to Response to KU AG-1 Question No. 201 Page 1149 of 2028 Charnas

# Clark, Ed

From:

Ritchey, Stacy

Sent:

Thursday, July 21, 2011 7:25 PM

To:

Crescente, Angela

Cc:

Hudson, Rusty; Wiseman, Sara; Neal, Susan

Subject:

IMEA/IMPA Partner Reimbursement Task for ARO

### Angela,

As I was entering the budget for the TC CCR Landfill Phase I & II (Projects 127134,127135,134055, & 134056) I realized we would need IMEA/IMPA partner reimbursement tasks to go against the ARO task we are going to use for the capping of the landfills. However, when I set them up (CP ARO IMEA and CP\_ARO IMPA) I got a cross validation rule stating the 676 (Customer Payment) exp. type is not valid account with 108799. This is not an issue until 2015. Would loading the numbers at Net instead of Gross be ok, or do I need to submit a GLAFF combination change request to allow the 676 expenditure type to work with account 108799?

#### Thanks,

Stacy Ritchey Sr Budget Analyst **Project Engineering** 

BOC Phone: (502) 627-4388

Fax: (502) 217-4980

Attachment to Response to KU AG-1 Question No. 201 Page 1150 of 2028 Charnas

# Clark, Ed

From:

PowerPlantAlerts@lge-ku.com Tuesday, July 19, 2011 6:00 AM Crescente, Angela PowerPlant Alerts - LGE-KU - AIP - ARO

Sent: To:

Subject:

Project 134560 has ARO

## Attachment to Response to KU AG-1 Question No. 201 Page 1151 of 2028 Charnas

# Clark, Ed

Plant Support <support@pwrplan.com> Tuesday, July 12, 2011 3:36 PM From:

Sent:

To: Crescente, Angela

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra; Ogilvie, Jim

Subject: RE: ARO reclass to 182 regulatory entries [ref:00D6KJDN.5006DvSco:ref]

We will follow up with Jim on the information you gave him when he was on site.

Thanks,

**Elizabeth Cowart PowerPlant Support** 770.937.3000 ref:00D6KJDN.5006DvSco:ref

Attachment to Response to KU AG-1 Question No. 201 Page 1152 of 2028 Charnas

# Clark, Ed

From: PowerPlant Support <support@pwrplan.com>

**Sent:** Thursday, July 07, 2011 10:28 AM

To: Crescente, Angela

Subject: [Case # 00002971] - RE: ARO reclass to 182 regulatory entries

Thank you for contacting PowerPlan Support. We have recently implemented a new case management tool. By contacting us through email, your request will automatically create a case and be placed in the appropriate queue (Plant, PowerTax, Property Tax, Tax Provision) and you will immediately receive confirmation with a case number. This will enable us to provide faster and better service while providing a clear basis for communication and updates regarding your case. Please be sure to send your case to support directly, rather than individual consultants, in order to insure your case is properly prioritized and tracked, and enabling you to receive appropriate updates. Please reply to your response from PowerPlan support for future email communication, or reference your case number should you wish to call with more detail.

Your request has been received and assigned case number 00002971.

Thank You PowerPlan Support ref:00D6KJDN.5006DvSco:ref

Attachment to Response to KU AG-1 Question No. 201 Page 1153 of 2028 Charnas

### Clark, Ed

From:

Crescente, Angela

Sent:

Thursday, July 07, 2011 10:27 AM

To:

'PowerPlant Support'

Cc:

Wiseman, Sara; Kinder, Debra; Wacker, Diana; Ogilvie, Jim

Subject:

RE: ARO reclass to 182 regulatory entries

Tracking:

Recipient

Read

'PowerPlant Support'

Wiseman, Sara Kinder, Debra Wacker, Diana

Read: 7/7/2011 11:02 AM

Read: 7/7/2011 11:18 AM

Read: 7/7/2011 10:40 AM

Ogilvie, Jim

#### Support,

This report is still not showing what I need it to show, so I believe there is still confusion regarding what I need. I have copied Jim Ogilvie on this email because I gave him some support/screenshots on what I need done when he was here in May. He also helped me set up the reg entries in March that I needed in the hopes that they would make the report work when I actually performed the work in PowerPlant. So, I figured I should go ahead and follow the procedure for sending this through support as this happened before the new procedure was put into place.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, April 13, 2011 11:22 AM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

I create new versions of each report and sent them to Nick to be included in the next rebuild. Whenever this new rebuild is made available, let me know, and I'll help you modify the report setup in Powerplant to

point to the new reports so you can test the new reports.

Sunjin Cone **PowerPlant Support** 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 13 April, 2011 9:35 AM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

Sure thing, you go to Assets>ARO>Reg Entry>Reports and it is report number ARO-4005.

By the way, I remembered on the way home last night that I have this same problem on report "Reg-1001" so the asset adjustment that I did is not showing up on this report by asset either. I'm sorry, I should of thought of that sooner. This report is in the same location as the one above.

# Attachment to Response to KU AG-1 Question No. 201 Page 1154 of 2028

Also, Nick Alexander is here today and tomorrow working on some things for us including simple formatting tweeks on my reports, but he doesn't want to send them to the build until you are finished so he doesn't cause you any trouble. So he wanted me to keep him posted of when you are completed with your changes.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, April 13, 2011 9:26 AM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Angela,

Can you tell me where in Powerplant you go to get to this report? I've lost my notes on how to find this report again.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 12 April, 2011 8:32 AM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

Any word on the progress of the report? Just checking on it because I will be using it for my monthly account reconciliations.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 3:09 PM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Report change won't be a quick turn around.

It will likely be next week before you'll get the report changed.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 1:48 PM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

# Attachment to Response to KU AG-1 Question No. 201 Page 1155 of 2028

I need to post these asset adjustments today since we have to close first thing in the morning. Are you expecting the report modification to happen today or can I go ahead and post these transactions and fix the report later? Is there anything else I can do to help?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 9:35 AM

**To:** PowerPlant Support; Crescente, Angela; Jim Ogilvie **Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Angela called and provided clarification. I still had journal entries on the brain. The report can be modified to include asset\_id information.

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

**Sent:** Tuesday, 05 April, 2011 9:16 AM **To:** 'Crescente, Angela'; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

No, there is no way this report can show the asset\_id information for the entry you are asking about.

You could run a query using the CPR Query tool window if you wanted to reconcile the asset adjustments dollars for the depr group.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Oqilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Sunjin,

I am OK with the entry including both assets. Is there some way I can modify the report to show what happened by asset?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

**Sent:** Monday, April 04, 2011 5:00 PM **To:** Crescente, Angela; Jim Ogilvie

Attachment to Response to KU AG-1 Question No. 201 Page 1156 of 2028 Charnas

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

#### Angela,

The entry for \$ 9,754,171.05 that includes the two assets is a one line transaction due to both assets being in the same depr group, and the entry information is setup to pull from the depr\_ledger table, which is a table where the dollars are by depr group, and it doesn't appear that the setup can be changed to retain asset\_id information.

Sunjin Cone PowerPlant Support 770-937-3000

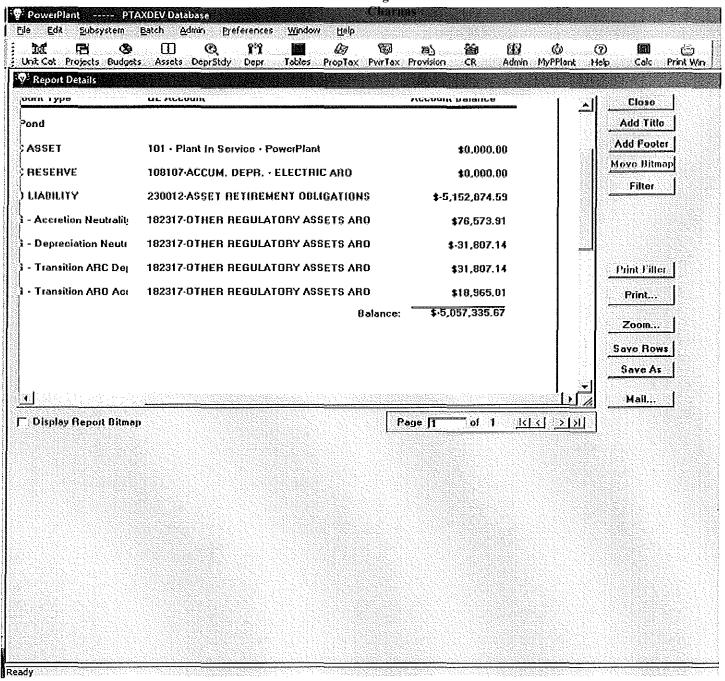
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

OK, accidentally told a lie (I'm sorry, it's Monday). I kept looking and now I can see where the reg entries fired, but since there was more than one done on LGE, it combined them which makes sense. However, my report does not reflect this activity by asset. Any ideas on how to make that work? I thought it worked before, but I must be mistaken. The other asset was Purc-MC Ash Pond for \$4,696,835.38.



<<li>e reg entry rows march test.xlsx>>

Thanks,

Angela

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Attachment to Response to KU AG-1 Question No. 201 Page 1158 of 2028 Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1159 of 2028

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#### Attachment to Response to KU AG-1 Question No. 201 Page 1160 of 2028 Charnas

#### Clark, Ed

From:

Porter, Janice

Sent:

Monday, June 27, 2011 12:27 PM

To:

Crescente, Angela

Cc:

Skaggs, John

Subject:

FW: ARO Quarterly Questionnaire.docx

Angela,

There are charges to a regular removal task. Should we set up and ARO task and move the charges?

Thanks, Janice

From: Allen, Lisa

Sent: Monday, June 27, 2011 11:48 AM

To: Porter, Janice; Skaggs, John

Subject: FW: ARO Quarterly Questionnaire.docx

John, thanks for the response.

Janice, see answer to question 3 - was that treated as an ARO and/or should it be?

Lisa

From: Skaggs, John

Sent: Monday, June 27, 2011 11:34 AM

To: Allen, Lisa

Subject: ARO Quarterly Questionnaire.docx



ARO Quarterly Questionnaire.d...

Lisa,

Attached questionnaire for Magnolia.

Thanks, John Attachment to Response to KU AG-1 Question No. 201 Page 1161 of 2028 Charnas

#### **ARO Quarterly Questionnaire**

Please answer the following questions.

1. To the best of your knowledge, are you aware of any changes that would impact the valuation of the asset retirement obligations ("AROs") that have been identified? Such changes may include changes in laws, statutes, regulations, precedents set by the Company, contracts, permits, certificates of need, right of way agreements, market costs or available resources for remediation, or planned retirements. (Please list)

Answer: No

2. To the best of your knowledge, are you aware of any acquired assets, land, or leases that will create an ARO? (Please list, include location)

Answer: No.

3. To the best of your knowledge, are you aware of any new construction that will create an ARO? (Please list, include location)

Answer: Replaced 1,300' of 4" bare pipe at Center during April/May 2011.

4. In certain very limited circumstances the Company could be determined to be obligated to retire an asset or a group of assets based upon a commitment made to a third party. Are you aware of any communications either written or verbal between representatives of LKE and third parties with respect to retirement of an asset or a group of assets owned by LKE at the end of operations or a specific point in time? If so, please list the identities of the LKE representatives and assets involved, as well as the third party or parties who were involved and the context in which the discussions took place.

Answer: No.

Complete	d by:	_John W. Skaggs	 	 	 
Date:	_6-27-11_		 		

#### Attachment to Response to KU AG-1 Question No. 201 Page 1162 of 2028 Charnas

#### Clark, Ed

From:

Wiseman, Sara

Sent:

Friday, June 24, 2011 1:29 PM

To:

Crescente, Angela

Subject:

FW: ARO Survey - Transmission

From: Miller, Jon

Sent: Friday, June 24, 2011 12:52 PM

To: Wiseman, Sara

Subject: ARO Survey - Transmission

Sara,

Attached is the completed 2<sup>nd</sup> quarter 2011 ARO survey for Transmission.

Jon

20110624122855....

Attachment to Response to KU AG-1 Question No. 201 Page 1163 of 2028 Charnas

#### ARO Quarterly Questionnaire

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1. To the best of your knowledge, are you aware of any changes that would impact the valuation of the asset retirement obligations ("AROs") that have been identified? Such changes may include changes in laws, statutes, regulations, precedents set by the Company, contracts, permits, certificates of need, right of way agreements, market costs or available resources for remediation, or planned retirements. (Please list)

#### Answer:

I am not aware of any.

2. To the best of your knowledge, are you aware of any acquired assets, land, or leases that will create an ARO? (Please list, include location)

#### Answer:

I am not aware of any.

3. To the best of your knowledge, are you aware of any new construction that will create an ARO? (Please list, include location)

#### Answer:

I am not aware of any.

4. In certain very limited circumstances the Company could be determined to be obligated to retire an asset or a group of assets based upon a commitment made to a third party. Are you aware of any communications either written or verbal between representatives of LKE and third parties with respect to retirement of an asset or a group of assets owned by LKE at the end of operations or a specific point in time? If so, please list the identities of the LKE representatives and assets involved, as well as the third party or parties who were involved and the context in which the discussions took place.

#### Answer:

I am not aware of any.

Completed by: _	Robly Tunble	
Date:	6-24-11	

#### Attachment to Response to KU AG-1 Question No. 201 Page 1164 of 2028 Charnas

#### Clark, Ed

From:

Wiseman, Sara

Sent:

Thursday, June 23, 2011 4:41 PM

To:

Crescente, Angela

Subject:

FW: ARO Quarterly Questionnaire.docx

I received a hard copy from Rusty. It is in my windowsill.

From: Garrett, Chris

Sent: Friday, June 17, 2011 9:37 AM

To: Wiseman, Sara

Subject: ARO Quarterly Questionnaire.docx

I hope an electronic submittal will work. Let me know if you need a hard copy.

Chris

ARO Quarterly Questionnaire.d...

#### **ARO Quarterly Questionnaire**

Please answer the following questions.

1. To the best of your knowledge, are you aware of any changes that would impact the valuation of the asset retirement obligations ("AROs") that have been identified? Such changes may include changes in laws, statutes, regulations, precedents set by the Company, contracts, permits, certificates of need, right of way agreements, market costs or available resources for remediation, or planned retirements. (Please list)

Answer: No

2. To the best of your knowledge, are you aware of any acquired assets, land, or leases that will create an ARO? (Please list, include location)

Answer: No

3. To the best of your knowledge, are you aware of any new construction that will create an ARO? (Please list, include location)

Answer: No

4. In certain very limited circumstances the Company could be determined to be obligated to retire an asset or a group of assets based upon a commitment made to a third party. Are you aware of any communications either written or verbal between representatives of LKE and third parties with respect to retirement of an asset or a group of assets owned by LKE at the end of operations or a specific point in time? If so, please list the identities of the LKE representatives and assets involved, as well as the third party or parties who were involved and the context in which the discussions took place.

Answer: No

Completed by:	Chris Garrett	
6/17/2011 Date:		

#### Attachment to Response to KU AG-1 Question No. 201 Page 1166 of 2028 Charnas

#### Clark, Ed

From:

Orlando, Pam

Sent:

Monday, September 26, 2011 3:03 PM

To:

Crescente, Angela

Subject:

FW: SCR Catalyst and Possible ARO Treatment

From: Orlando, Pam

Sent: Monday, September 26, 2011 9:59 AM

To: Rose, Bruce

Subject: RE: SCR Catalyst and Possible ARO Treatment

#### Bruce,

So sorry I didn't get back to you before my vacation! I have attached the full EPRI report and the most recent update below. The last item includes two key tables from the reports that may provide the information you need. Disposal cost is estimated at \$125 per cubic meter (2008 dollars). We own 6600 cubic meters of catalyst currently (628 cubic meters are being regenerated now and 337 cubic meters will be regenerated in early 2012).

There are several re-cycling options, identified in item 3 below. We will pursue the steel making application when the time comes, as Hitachi has indicated they have a contact nearby who may be interested in recycling. I hope this is what you need.

#### Pam Orlando







2010 Tech Update 1019710.pdf 1015750.pdf 20110926093043....

From: Rose, Bruce

Sent: Thursday, September 22, 2011 11:02 AM

To: Orlando, Pam

Subject: SCR Catalyst and Possible ARO Treatment

Importance: High

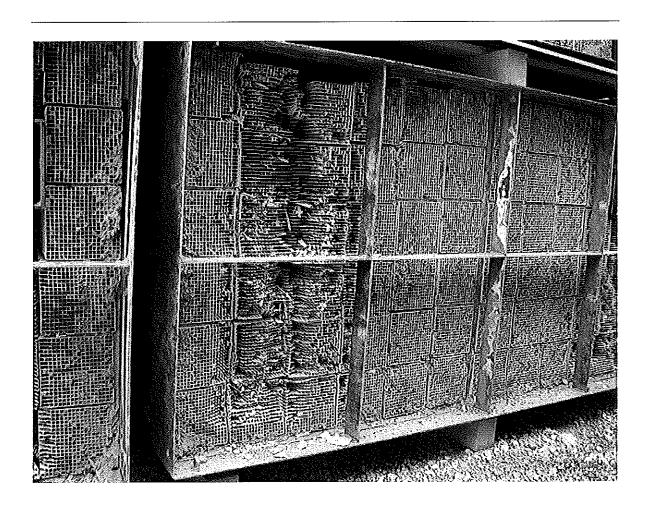
Pam,

Sorry, but Sara asked if I had heard back from you regarding the possible ARO treatment of catalyst layers once they are no longer viable for refurbishment. She has a meeting to discuss this topic Monday AM. Thanks



# Selective Catalytic Reduction Catalyst Recycle and Re-Use Options

1019710



Attachment to Response to KU AG-1 Question No. 201 Page 1168 of 2028 Charnas Attachment to Response to KU AG-1 Question No. 201 Page 1169 of 2028 Charnas

## Selective Catalytic Reduction Catalyst Recycle and Re-Use Options

1019710

Technical Update, December 2010

**EPRI Project Manager** 

A. Jimenez

Attachment to Response to KU AG-1 Question No. 201 Page 1170 of 2028 Charnas

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W.S. Hinton & Associates

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#### **ACKNOWLEDGMENTS**

The following organization, under contract to the Electric Power Research Institute (EPRI), prepared this report:

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This report describes research sponsored by EPRI.

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#### **ABSTRACT**

Given the widespread implementation of selective catalytic reduction (SCR) technology, there is a great deal of interest in finding viable recycle/re-use routes for spent catalyst as an alternative to landfilling. The current effort has focused on detailed evaluation of several recycle/re-use processes that were identified in previous EPRI studies. These recycle/re-use technologies include mineral filler applications, incorporation into wet-bottom boiler slag, cement kiln co-processing, and use in iron/steel-making applications.

Efforts related to mineral filler applications focused on laboratory analyses designed to qualify the spent catalyst material for use in applications such as asphalt paving materials, asphaltic shingles, and plastic/polymer filler applications. These laboratory analyses were based primarily on current industry standard analyses commonly used for the target applications. This effort represents a first step in commercializing a mineral filler recycle/re-use route.

A detailed engineering analysis was performed to evaluate incorporation of spent catalyst into wet-bottom boiler slag as a potential spent catalyst re-use route. The process involves adding catalyst by various means to a wet-bottom boiler where the material becomes homogeneously incorporated into the boiler slag. Various parameters, such as catalyst feed rate, plant emissions, and balance-of-plant effects, were evaluated as a way of qualifying the technology for potential further development.

Cement kiln co-processing of spent catalyst was investigated to determine the applicability of the material to the cement manufacturing process. Various engineering analyses were conducted, and, in particular, a case study was performed with a major co-processor to determine various process parameters and development needs. Cement kiln co-processing is a particularly attractive potential recycle/re-use route for spent catalysts since co-processing is currently conducted on a large scale with varied wastes. The familiarity of the cement industry in co-processing wastes, and the infrastructure already in place, make this recycle/re-use route particularly attractive in terms of the limited development that would be required to fully implement the technology as applied to spent SCR catalysts.

The final recycle/re-use route evaluated relates to use of spent catalyst in iron/steel-making processes where the material would potentially act as a source of raw metallic materials, or as a replacement for slagging/fluxing agents used in iron/steel manufacture. The efforts focused primarily on discussions with various iron/steel manufacturers and research consortiums as an initial phase in determining overall feasibility of the proposed process.

The project has made significant headway in evaluating potential technologies for the recycle/reuse of spent SCR catalysts. The results will provide guidance to the utility industry in terms of which technologies are the most technically viable, commercially developed, and economically attractive.

#### Keywords

SCR
Spent catalyst
Catalyst recycle and re-use
Bituminous concrete paving

Selective catalytic reduction Waste disposal Cement kiln co-processing Attachment to Response to KU AG-1 Question No. 201 Page 1174 of 2028 Charnas

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# **1**INTRODUCTION

#### Project Purpose and Background

Over the past several years, EPRI has addressed various issues related to catalyst regeneration, rejuvenation, cleaning, recycle/re-use, and disposal. In particular, studies performed over the period 2007 through 2009 identified several potential recycle/re-use technologies that warranted further investigation, as listed below. This report details the findings of those investigations.

- Mineral Filler Applications Testing was conducted to investigate the utilization of spent catalyst as a mineral filler in various applications including bituminous concrete applications.
- Wet-Bottom Boiler Slag Incorporation An engineering study was performed to determine the general process applicability, and process parameters associated with injecting spent catalyst into wet-bottom boilers, resulting in the incorporation of the catalyst into the slag.
- Cement Kiln Co-Processing A feasibility study was conducted to examine the utilization
  of spent catalyst as a raw feed to cement kilns (co-processing). Work included evaluations of
  spent catalyst by a commercial co-processor, as well as a detailed case study and general
  engineering analysis.
- Iron/Steel-Making Applications A general feasibility analysis was made which focused on input from the iron and steel industry to determine the general applicability of spent catalyst material to the industry's various processes.

#### SCR Implementation and Spent Catalyst Generation Rate

SCR is widely implemented on coal-fired boilers, with about 115 GW of capacity currently in place domestically. Previous EPRI work related to the above referenced reports projected coal-fired SCR capacity into the future. This information was updated for the current report, as shown in Figure 1-1. The projected coal-fired SCR capacity up to 2020 is given, based loosely on several published sources.<sup>2</sup>

<sup>&</sup>lt;sup>1</sup> See EPRI Reports: "SCR Catalyst Disposal, Recycle, and On-Site Washing/Rejuvenation Options," Product ID: 1016397, 3/31/08, "SCR Catalyst Disposal, Recycle, and On-Site Washing Options and Experience," Product ID: 1015750, 12/23/08, and "Selective Catalytic Reduction (SCR) Recycle, Re-Use and Disposal Options," Product ID: 1017554, 12/16/2009.

<sup>&</sup>lt;sup>2</sup> Murphy, James T., National Energy Technology Laboratory, "Projection of U.S. Coal-Fired Power Plants Potentially Impacted by Excess SO3 Emissions," DOE/NETL 2006 Environmental Controls Conference, May 16-18, 2006, Pittsburgh, PA.; Clean Coal Technology, Topical Report No. 23, May 2005.; "Environmental Technologies for Coal-Fired Power Plant," Turkish-American Clean Energy Conference, Istanbul, Turkey, January 29-30, 2008; Misc. trade information and presentations.

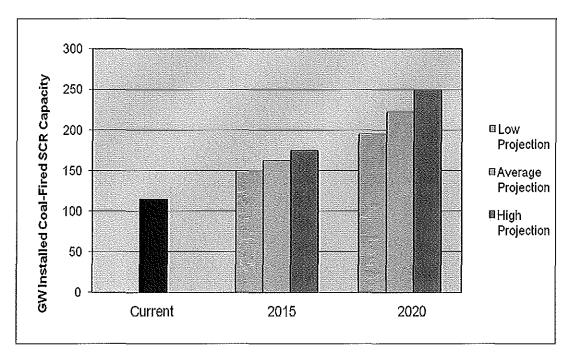


Figure 1-1
Projected Coal-Fired U.S. SCR Capacity

This SCR implementation rate directly affects the potential spent catalyst generation rate, but additional factors, such as the catalyst deactivation rate, guaranteed life, and required deNOx levels, all influence the rate of spent catalyst generation. Given the large number of influencing factors, it is difficult to accurately project spent catalyst generation rates for the industry as a whole, especially into the relatively distant future. This is especially true since emerging catalyst technologies, or alternate NOx control technologies, could heavily affect long-term projections. As a result, depending on the estimation assumptions, predicted spent catalyst generation rates vary quite widely.

Notwithstanding the above mentioned difficulties in accurately predicting spent catalyst generation rates, an updated projection was developed for the coal-fired utility industry as a whole. For this projection, it was assumed that the "average" SCR installation requires roughly one ton of catalyst per MW of capacity. Note that this is an extremely rough estimate due to weight differences between catalysts, as well as other catalyst characteristics, such as activity, pitch, etc. In addition, unit specifics, such as desired guaranteed life and required NOx reduction, will also heavily affect the amount of catalyst required for any particular installation. It was further assumed that, on average, one third of the installed catalyst for any particular unit would require replacement every two years, consistent with roughly one layer of a three-layer reactor being replaced every two years. This estimate may be more frequent than many installations require, but has been utilized to account for the occasional facility having acute catalyst failures.

These assumptions allow for a very rough estimate of the U.S. spent catalyst generation rate to be determined on a yearly basis, as shown in Figure 1-2. Given that much of the catalyst that is considered spent may actually be reconditioned in some manner (cleaned, rejuvenated, or regenerated) to recover its activity, not all spent catalyst would actually be destined for recycle or

disposal. The rate at which spent catalyst will be reconditioned is difficult to determine, especially for projections into the distant future, thus the projections as shown in the figure have been made as a function of the level of reconditioning that is undertaken, on average, by the industry.

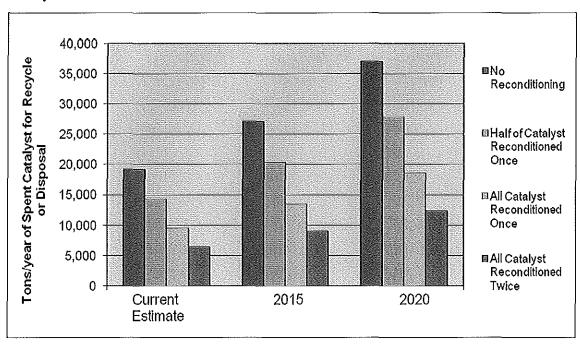


Figure 1-2
Catalyst Available for Recycle or Disposal as Function of Reconditioning Rate

The "No Reconditioning" case is equivalent to the expected spent catalyst regeneration rate as a whole (prior to any reconditioning activities), but it is clear that some reconditioning would take place, making the actual amount of catalyst requiring recycle or disposal somewhat lower. As the level of reconditioning increases, the amount of catalyst recycled or disposed will vary proportionately. Given that catalyst reconditioning is relatively prevalent in the industry, with many system owners choosing to recondition catalyst for their own use, or selling the spent catalyst to the reconditioning firms for future sale to other customers, a reasonable assumption for the rate of reconditioning might be the "All Catalyst Reconditioned Once" case. If this assumption holds, then the projected rate of spent catalyst requiring recycle or disposal will be on the order of 20,000 tons/year by 2020.

#### **Aged Catalyst Composition**

Previous EPRI work developed chemical composition data for spent SCR catalysts as shown in Table 1-1.<sup>3</sup> These data were based on X-ray fluorescence (XRF) analyses (both bulk and surface) for 274 catalyst samples, representing a range of catalyst manufacturers, catalyst formulations,

<sup>&</sup>lt;sup>3</sup> See: "SCR Catalyst Disposal, Recycle, and On-Site Washing Options and Experience," EPRI Report No. 1015750, 12/3/2008.

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fuels, boiler types, ages, etc. The data were acquired from a firm experienced in catalyst testing; thus, a relatively large database was available. On a composite basis, these data provide valuable information about catalyst composition for the SCR fleet, as a whole, and offer a basis to which any particular catalyst can be compared. One important parameter to consider is catalyst age. The data are based upon multiple samples of various ages, not necessarily samples acquired at the end of catalyst life. Thus, a significantly aged catalyst may, on average, have levels of poisons higher than those indicated by the average values in the table. Consequently, one might reasonably expect that the maximum arsenic level indicated, for example, would correspond to a catalyst that was applied to a high-arsenic fuel for a relatively long operational period. The age parameter applies primarily to catalyst poisons, since most primary catalyst components, as present at the time of manufacturing, will not change significantly with catalyst exposure. For recycle involving metals recovery, the levels of titanium, vanadium, tungsten, and molybdenum are of particular interest. Note that for niobium (Nb), thallium (Tl), and barium (as BaO), the sample set is considerably smaller than 274 samples – these analytes were not always quantified.

Table 1-1 XRF Composition Data for 274 Catalyst Samples

Species	Sample Type	Average (%)	Standard Deviation	Maximum (%)	Minimum (%)
Titanium (TiO <sub>2</sub> )	Bulk	73.9	7.75	87.3	54.1
Triantini (TiO <sub>2</sub> )	Surface	64.8	13,3	89.8	24.9
Vanadium (V,O,)	Bulk	0.87	0.52	3.5	0.1
v anadium (v <sub>2</sub> O <sub>5</sub> )	Surface	0.85	0.55	4.3	0.22
Tungsten (WO <sub>3</sub> )	Bulk	5.26	5.39	21.0	0
Tungsten (WO <sub>3</sub> )	Surface	4.85	4.82	20.7	0
Molybdenum (MoO <sub>3</sub> )	Bulk	2.02	1.90	7.5	0.03
	Surface	1.61	1.52	7.3	0.03
Iron (Fe <sub>2</sub> O <sub>3</sub> )	Bulk	0.65	0.74	6.0	0.03
11011 (1 <sup>1</sup> C <sub>2</sub> O <sub>3</sub> )	Surface	1.20	1.04	5.9	0.17
Silicon (SiO <sub>2</sub> )	Bulk	10.39	4.36	26	3.7
	Surface	13.86	7.47	49.4	1.85
Aluminum (Al,O,)	Bulk	2.63	1.75	9.1	0.6
(A1 <sub>2</sub> O <sub>3</sub> )	Surface	4.02	2.53	13.2	0.42
Calcium (CaO)	Bulk	1.22	0.81	3.4	0.03
Calcium (CaO)	Surface	1.76	1.3	11.5	0.03
Magnesium (MgO)	Bulk	0.28	0.17	0.72	0.03
	Surface	0.34	0.26	1.76	0.03
Barium (BaO)	Bulk	0.36	0.92	3.6	0
Danum (DaO)	Surface	0.76	1.17	3.2	0
Sodium (Na,O)	Bulk	0.19	0.22	1.64	0.01
	Surface	0.30	0.26	1.69	0.03
Potassium (K,O)	Bulk	0.17	0.16	1.57	0.03
1 Otassium (K <sub>2</sub> O)	Surface	0.26	0.26	2.0	0.03
Sulfur (SO <sub>3</sub> )	Bulk	1.66	0.85	5.6	0.11
	Surface	5.2	4.3	32.8	0.11
Phosphorus (P,O <sub>s</sub> )	Bulk	0.12	0.17	1.36	0.03
FROSPHOTUS (P <sub>2</sub> O <sub>5</sub> )	Surface	0.39	0.49	2.7	0.03
Niobium (Nb)	Bulk	0.11	0.05	0.21	0.02
	Surface	0.10	0.10	0.95	0.04
Thallium (Tl)	Bulk	0.06	0.04	0.25	0.03
**************************************	Surface (not available)	NA	NA	NA	NA
Arsenic (As)	Bulk	7,186	6,384	26,470	10
zmocine (ma)	Surface	8,352	6,217	31,085	50

<sup>&</sup>lt;sup>4</sup> Except for Nb, Tl, and BaO.

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Table 1-2 gives a general guideline as to the ceramic and metal proportions of various catalyst types. This table should only be used as a general guideline – the catalyst manufacturer can give more definitive information for specific catalyst formulations and module designs. This information is particularly helpful when assessing the potential value of bulk metals that are present with the catalyst modules, and in the case of plate catalysts, the bulk metal associated with the screen supports. This information aids in the determination of how much actual ceramic material is available for recycle or disposal for any given tonnage of catalyst modules.

Table 1-2
Approximate Metal/Catalyst Weight Fractions for General Catalyst Types

Catalyst Type	Bulk Module Metal Fraction	Screen/Support Metal Fraction (SST)	Ceramic Catalyst Fraction
Honeycomb	40%	NA	60%
Hybrid/Corrugated	10%	NA	90%
Plate	33%	33%	33%

## 2

## UTILIZATION OF SPENT SCR CATALYST IN MINERAL FILLER APPLICATIONS

#### Introduction

One area of particular emphasis in the current research study is the utilization of spent catalyst as mineral filler in several applications. This work is closely related to prior work which investigated the use of catalyst in concrete-related applications (portland cement type). This previous work showed that the catalyst had no pozzolanic activity, but that it could potentially be used as an aggregate in certain applications. In particular, applications which did not have a high performance demand, such as strength performance, would likely be the most attractive. Using these previous findings as a basis, it was determined that several mineral filler applications could potentially be utilized for catalyst recycle/re-use. These mineral filler applications include:

- Bituminous Concrete (Paving Asphalt)
- Asphaltic Shingles
- Plastic/Polymer Products

In general, mineral fillers are used in various asphaltic, plastic, and rubber materials to impart various qualities such as strength, durability, and cohesiveness. The selection of a mineral filler for a particular application will depend on various parameters including technical applicability (filler physical and chemical characteristics), cost, availability, and handling logistics. Pulverized limestone is the most commonly utilized mineral filler, but many other materials are employed for the purpose, including various stone dusts, fly ash, crushed slags, silica, hydrated lime, portland cement, and naturally occurring mineral materials.

In the case of bituminous concretes (i.e. asphaltic concretes, or simply "paving asphalt"), mineral fillers are often used to fill voids between larger aggregate particles, increasing the density, strength, and durability of the resulting mixture. Technically, as defined by the Asphalt Institute, mineral fillers are a finely divided mineral product with at least 65 percent mass passing through a No. 200 (0.074 mm) sieve, with typically 100% of the material passing a No. 30 (0.60 mm) sieve. Mineral fillers generally make up less than 3 wt% of the hot mix asphaltic concrete.

For asphaltic shingle applications, mineral fillers are used to impart color, strength, and durability to the product, and to add bulk. Mineral fillers are especially important in adding sunlight and weather resistance, and to prevent rutting and cracking. Mineral fillers may comprise up to roughly 40% of the asphaltic shingle weight.

In traditional plastic/polymer applications, mineral fillers are used to replace a portion of the polymer material, thereby reducing cost, since the comparative filler versus polymer cost is generally quite low. However, many current plastic applications require that "functional" mineral fillers be used, which impart certain processing characteristics or finished material properties. For example, mineral fillers are often used to increase the temperature resistance of certain

polymers for specific high-temperature applications. Physical characteristics which are considered key to plastic/polymer applications include the particle size distribution, particle shape, surface area, dispersibility, and inherent color.

In order to confirm the applicability of spent catalyst to the above mineral filler uses, a number of laboratory analyses were conducted related to provide a general filler profile, as follows.

- Particle Size Distributions
- Viscosity and Density
- Gradation Analysis
- Rigden Voids Evaluation

#### Characteristics of the Spent Catalyst Utilized in the Study

Honeycomb SCR catalyst was sourced from a commercial utility boiler for use in this study. The catalyst was applied to a PRB-fired boiler, and was of conventional type and of relatively large pitch, consistent with high-dust applications. The chemical composition and leaching behavior of the raw spent catalyst sample were determined for reference purposes, as described below.

#### Composition of Spent Catalyst Utilized in the Study

The bulk composition of the catalyst utilized in the study was evaluated using X-Ray Fluorescence Spectroscopy (XRF). The data are shown in Table 2-1. Note that this analysis was utilized to determine the principal oxide components of the catalyst, rather than to determine trace levels of contaminants.

Table 2-1 Catalyst Composition Data by XRF

Analyte	Quantity
SiO <sub>2</sub>	6.63 %
Al <sub>2</sub> O <sub>3</sub>	3.30 %
Fe <sub>2</sub> O <sub>3</sub>	0.40 %
SO <sub>3</sub>	2.85 %
CaO	0.00 %
Na <sub>2</sub> O	0.17 %
MgO	0.12 %
K <sub>2</sub> O	0.08 %
P <sub>2</sub> O <sub>5</sub>	0.31 %
TiO <sub>2</sub>	74.18 %
SrO	0.07 %
BaO	3.42 %
Total	91.53%

#### Leaching Behavior of Spent Catalyst

The leaching behavior of the raw spent catalyst was established to offer some baseline value as to the potential for contaminant leaching for the catalyst material itself. The leaching tests were performed using standard test methods, which produced an aqueous leachate. The results of this testing are shown below in Table 2-2.

Table 2-2 Leaching Results for Raw Spent Catalyst

Analyte	Leachate Concentration (mg/L)
Arsenic	0.032
Barium	0.096
Cadmium	<0.001
Chromium	0.005
Lead	0.008
Selenium	0.070
Silver	<0.001
Mercury	0.0011

#### Filler Profile Testing

A series of filler profile tests was conducted on the catalyst sample. These tests were conducted in conjunction with two reference fly ashes, since in many cases subsequent testing was conducted on catalyst/fly ash blends. The fly ashes also provided a benchmark for various parameters to which the catalyst could be compared. The fly ashes were acquired from large utility boilers, one firing PRB coal, and one firing eastern bituminous (EB) coal. The tests included such parameters as crushed catalyst particle size distribution (PSD), viscosity, specific gravity, and bulk density.

#### Particle Size Distributions

The particle size distributions<sup>6</sup> were measured for the catalyst sample, the reference fly ash samples, and two catalyst/fly ash blends. Table 2-3 shows the mean and median particle sizes for the various samples.

<sup>&</sup>lt;sup>5</sup> EPA Test Methods SW-846/1311/6010B and SW1311/7470A (mercury) using preparation methods 3010 A and SW7470P (mercury).

<sup>&</sup>lt;sup>6</sup> Measured using a Horiba LA-920 Particle Size Distribution Analyzer.

Table 2-3
Mean and Median Particle Sizes of Catalyst and Fly Ash Samples

Parameter	Catalyst	PRB Fly Ash	Catalyst/PRB Blend	EB Fly Ash	Catalyst/EB Blend
Median Diameter (µm)	20.8	12.4	14.6	14.3	16.0
Mean Diameter (μm)	39.8	29.2	33.1	29.6	33.3

Figure 2-1 shows the PSD for the crushed catalyst sample. A bi-modal distribution can be noted, with peaks at roughly 25 and 95 microns ( $\mu$ m). Figure 2-2 shows the distribution of the PRB fly ash, where a tri-modal distribution is apparent, with peaks at roughly 0.7, 20, and 95 microns. The catalyst/PRB blend, as depicted in Figure 2-3 shows a similar tri-modal distribution, with peaks at roughly the same points as the parent PRB fly ash. Figure 2-4 shows the PSD for the eastern bituminous fly ash, where the distribution is principally unimodal, with a primary peak at roughly 20 microns, although there are a relatively large number of particles up to roughly 100 microns, for this sample. The catalyst/EB blend, as shown in Figure 2-5, shows distinct peaks at 0.6 and 25 microns, with a less distinct peak at roughly 90 microns. Overall, the PSD data show that the catalyst is not markedly different from the reference fly ash samples, at least in terms of size distribution.

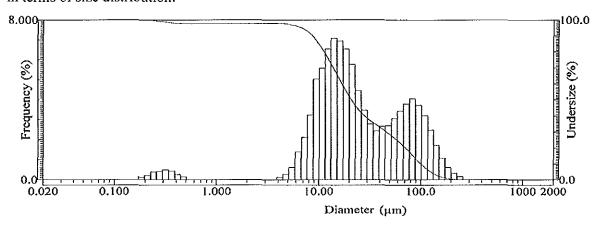


Figure 2-1
Particle Size Distribution of Crushed Catalyst

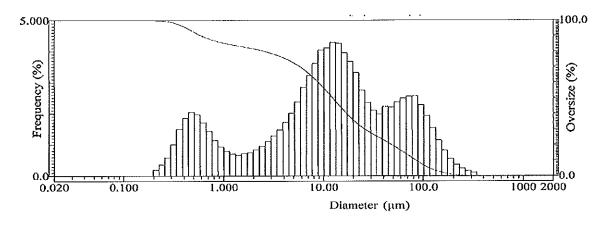


Figure 2-2
Particle Size Distribution of PRB Fly Ash

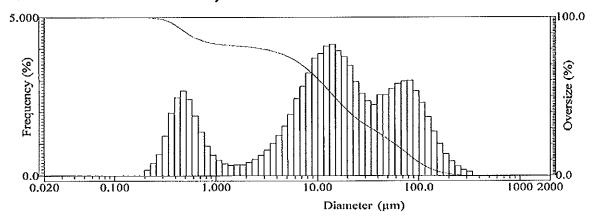


Figure 2-3
Particle Size Distribution of Catalyst/PRB Fly Ash Blend

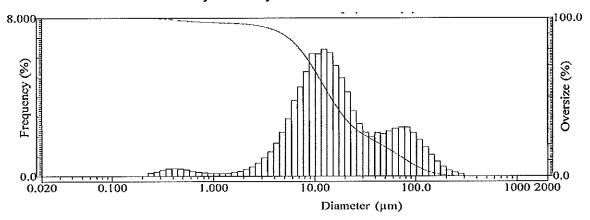


Figure 2-4
Particle Size Distribution of Eastern Bituminous Fly Ash

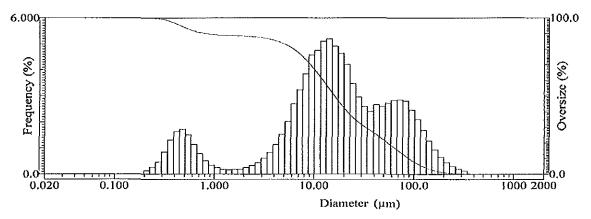


Figure 2-5
Particle Size Distribution of Catalyst/Eastern Bituminous Fly Ash Blend

#### Viscosity and Density

The viscosity and various density parameters were measured for the catalyst samples, fly ash samples, and catalyst/fly ash blends. The viscosity measurement<sup>7</sup> is designed to simulate a 65% loading of mineral filler into asphalt at 400°F, primarily related to roofing shingle applications. (Note that this test method is not generally applicable to paving asphalt applications.) The specific gravity measurement<sup>8</sup> evaluated the material density excluding void spaces, while bulk density was determined using a calibrated measure for both loose and vibrated samples. The results of this testing are shown in Table 2-4. The data indicate that the catalyst will produce a more viscous mix than fly ash alone, when tested in accordance with roofing shingle applications.

Table 2-4
Viscosity and Density Measurements

Parameter	Catalyst	PRB Fly Ash	Catalyst/PRB Blend	EB Fly Ash	Catalyst/EB Blend
Viscosity (Cp)	N/A <sup>9</sup>	2,594	17,900	11,578	23,245
Specific Gravity (gm/cm³)	3.45	2.64	2.96	2.38	2.76
Loose Unit Wt (lb/ft³)	62.4	70.9	66.4	60.2	60
Vibrated Density -2 min. (lb/ft³)	78.0	91.8	86.7	72.6	78
Vibrated Density -final (lb/ft³)	82.1	100.7	89.2	80	82

<sup>&</sup>lt;sup>7</sup> Performed using a Brookfield LVDV II+ Viscometer, with a 65 wt% load of solids in 20/50 motor oil, according to standard practices.

<sup>&</sup>lt;sup>8</sup> Performed using a Quantichrome Helium Pycnometer

<sup>9</sup> Viscosity was outside of measurable range

#### **Gradation Testing**

A catalyst sample was evaluated for use as mineral filler for bituminous paving mixtures according to ASTM standards. The gradation was conducted according to ASTM D-546-05 "Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures," which provides the methodology for determining the material gradation. The actual mineral filler gradation requirements are specified in ASTM D-242 "Standard Specification for Mineral Filler for Bituminous Paving Mixtures." Generally, the specification requires that the filler consist of finely divided mineral matter, with free-flowing characteristics, and free of agglomerations. Specifically, the standard requires that the gradation be within specified ranges. The results of the testing are shown in Table 2-5, along with the ASTM specifications. The data show that the catalyst meets the specifications.

Table 2-5
Mineral Filler Gradation Test Results

Sieve Number	# 16	# 30	# 50	#200
Sieve size	1.18 mm	600 µm	300 μm	75 μm
Catalyst Fraction Passing Size	100%	97.4%	96.4%	82.9%
ASTM D-242 limits	100%	97-100%	95–100%	70–100%

#### Rigden Voids Testing

The term "Rigden Voids" applies to the void volume in dry-compacted mineral filler or fines. The method is based on the assumption that the maximum bulk density of fines can be obtained by compacting the material in a mold. The Rigden Voids parameter is sensitive to changes in gradation and other properties of the fines, and therefore acts as a parameter for monitoring the uniformity of the potential filler material. In particular, the parameter may be used to estimate the stiffening effect of the filler when mixed with asphalt in bituminous paving applications. Typically, the Rigden Voids volume should be 50% or less for these applications, otherwise excessive mix stiffness will potentially result.

Two test series were run to determine the Rigden Voids. The second test series basically repeated the first, to help establish variability. In addition, within each test series, two samples of each of the material mixtures (all catalyst, catalyst/PRB fly ash blend, and catalyst/EB fly ash blend) were tested. Thus, four individual measurements were made for each of the material mixtures. The results are shown in Table 2-6.

For the unblended catalyst, the Rigden Voids value expressed as a percentage ( ${}^{6}V_{DV}$ ) was on the order of 55%. This is greater than the recommended 50% value. For the catalyst/PRB fly ash blend, the average Rigden Voids value was roughly 43%, with no individual measurement exceeding 46%. Thus, this particular blend would be deemed acceptable based on this evaluation. For the catalyst/EB fly ash blend, the first test series showed marginal acceptance, with an average at 50% for the two replicate samples in this test series. The second test series, however, showed higher voids, at an average of about 58%, exceeding the 50% recommendation.

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Thus, for this particle blend, the Rigden Voids testing showed that it will be marginally acceptable, at best. Overall, the results of this testing indicate that the catalyst may need to be evaluated on a case-by-case basis in terms of Rigden Voids, as a function of both catalyst properties, and the parent fly ashes used in the blend.

Table 2-6 Results of Rigden Voids Testing

Sample	Sample Catalyst				Catalyst/PRB Fly Ash Blend				Catalyst/EB Fly Ash Blend						
Series	Seri	es 1	Seri	es 2		Seri	es 1	Seri	es 2		Series 1 Series 2		es 2		
Duplicate	A	В	A	В	Ave.	A	В	A	В	Ave.	A	В	A	В	Ave.
Specific Gravity	3.024	3.024	3.024	3.024	3.024	2.861	2.861	2.861	2.861	2.861	2.753	2.753	2.753	2.753	2.753
Wt. of Compacted Sample (g)	1.14	1.30	1.00	1.20	1.16	1.23	1.28	1.50	1.30	1.32	1.32	1.27	1.50	1.40	1.37
Sample Thickness (in)	0.263	0.317	0.255	0.287	0.281	0.248	0.261	0.281	0.277	0.267	0.300	0.310	0.406	0.405	0.355
Mold Dia. (in)	0.50	0.50	0.50	0.50	0.5	0.50	0.50	0.50	0.50	0.5	0.50	0.50	0.50	0.50	0.5
V <sub>DB</sub> (cm <sup>3</sup> )	0.81	0.98	0.79	0.88	0.87	0.76	0.80	0.87	0.85	0.82	0.92	0.96	1.25	1.25	1.10
V <sub>DS</sub> (cm <sup>3</sup> )	0.38	0.43	0.33	0.40	0.39	0.43	0.45	0.52	0.45	0.46	0.48	0.46	0.54	0.51	0.50
$V_{DV}$ (cm <sup>3</sup> )	0.43	0.55	0.46	0.49	0.48	0.33	0.36	0.34	0.40	0.36	0.45	0.49	0.71	0.74	0.60
%V <sub>DV</sub>	53.50	56.01	57.93	55.15	55.65	43.77	44.39	39.47	46.79	43.61	48.15	51.73	56.47	59.28	53.91
Bulk Density of Compacted Dust (g/cm³)	1.406	1.330	1.272	1.356	1.341	1.609	1.591	1.732	1.522	1.614	1.427	1.329	1.198	1.121	1.269

 $V_{DB} = Bulk$  volume of compacted dust sample

 $V_{DS}$  = Volume of dust solids

 $V_{DV}$  = Volume of voids in compacted dust

 $<sup>%</sup>V_{DV} =$ Rigden Voids – volume of voids in compacted dust, as percentage

#### **Economics**

The economics of mineral filler applications will be highly case specific, depending on the product in which the spent catalyst is utilized, and various other factors, such as catalyst transport and the value of the mineral filler which is replaced by the catalyst. As a result, it is impossible at present to determine any specific economics for mineral filler applications, although some generalizations can be made.

It is unclear whether catalyst would be used on a project-specific intermittent basis, or whether catalyst would be utilized continuously as part of a routinely produced commercial product. It can be imagined that certain applications, such as paving asphalt, might be conducted on an individual basis, where a single paving application would take advantage of a particular batch of spent catalyst as mineral filler. This might be conducted in conjunction with an on-site utility paving project. Other applications, such as the continuous production of plastic products, would likely represent the opposite end of the spectrum, where catalyst is utilized on a continuous basis.

In any event, the value of the catalyst as mineral filler is not great, since the cost of commonly used mineral fillers is quite low. Thus, most of the value to the utility would derive from the offset of landfill costs. It does not appear that spent catalyst could be sold at any appreciable price as mineral filler, and most likely a premium would have to be paid by the utility to the product manufacturer for the catalyst to be utilized. One exception to this might be on-site projects, where the utility simply specifies the catalyst as the mineral filler. In such a scenario, there may be little if any cost associated with utilizing the catalyst, and there may be some slight credit to the utility since at least a portion of the mineral filler normally purchased may be avoided. In such a case, the value to the utility would essentially be the offset disposal cost (environmental good-will would also be accrued).

## Conclusions

The data acquired to date indicate that spent catalyst may be suitable for mineral filler applications, at least in terms of basic physical parameters. Additional studies are required for specific targeted applications to fully understand all potential impacts that the catalyst may have on the final product. Specifically, such issues as leachability and durability for specific applications would need to be addressed as a next step to full commercialization. As is the case with many other proposed utilization routes, the inherent value of the catalyst as a mineral filler is not large, and therefore most of the derived value of the utilization route is a result of avoided disposal costs.

# 3 INCORPORATION OF SPENT SCR CATALYST WITH WET-BOTTOM BOILER SLAG

#### Introduction

Technology currently owned by Evonik Industries AG<sup>10</sup> provides for a utilization route for spent SCR catalyst by incorporating it in boiler slag. The technology involves the introduction of spent catalyst into a wet-bottom boiler where it dissolves into the molten bottom-ash and becomes integrated with this stream. The resulting slag can then be utilized for various applications, such as construction aggregate, in a manner similar to traditional uses of slag.

The fusion temperature of SCR catalyst itself is relatively high, on the order of 3,000° to 3,250°F. This is well above typical boiler combustion temperatures. Thus, the catalyst particles will not become directly molten under normal boiler operating conditions. However, at appropriate temperatures and catalyst/slag weight ratios, fine catalyst particles will dissolve into the boiler slag and become incorporated within the chemical matrix of the slag. The exact required minimum temperature at which the spent catalyst particles will completely dissolve is a function of the catalyst and slag composition, as well as the catalyst to slag weight ratio.

As practiced in Europe, the technology has only been applied to a very specific boiler configuration. Specifically, the facility used a wet-bottom boiler which was equipped with 100% fly ash recycle and a tail-end SCR. The fly ash recycle insured that all ash was ultimately converted to slag. Further, the installed SCR catalyst was protected to a large degree from gas-phase contaminants by its tail end configuration. This tail-end location was downstream of flue gas scrubbing, and thus required re-heating to facilitate the SCR reaction. The facility was also equipped with a limestone feed system for ash fusion point adjustment. Spent catalyst feed was incorporated with this limestone feed system as a convenient method of introducing the catalyst/limestone mixture to the coal before firing.

Clearly, the above process configuration is not common in the U.S., especially as related to the tail-end SCR configuration. Thus, the current efforts related to the evaluation of this recycle scenario are focused on alternate boiler/SCR configurations, using available data and general engineering analyses to examine the potential feasibility of the various process scenarios.

<sup>&</sup>lt;sup>10</sup> See U.S. Patent 5,120,690, entitled "Process for the Utilization of Used DeNOx Catalysts," and the related Patent 6,067,914, providing for coal and catalyst/titania co-injection.

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A number of process considerations are applicable to the analysis as follows.

- Process Mechanics
- Applicability of Boiler Type
- Process Performance
- Applicability of Coal Type
- Spent Catalyst Characteristics
- Slag Product Characteristics

The above considerations are discussed in detail in the following report sections. To further understand the practical application of the technology, two case studies were also developed; one examining a PRB coal fired unit, and a second examining a bituminous coal fired unit. These two case studies follow the discussions of the above primary process considerations.

#### **Process Mechanics**

The actual physical design of the recycle process is mainly related to the mechanics of introducing the catalyst into the boiler. Figure 3-1 shows a generalized boiler schematic which is helpful in understanding the various catalyst introduction points that are possible. The current discussion will focus on the introduction of catalyst into the furnace, while subsequent discussions will focus on the impact of boiler type and fuel on the overall process design. Potential catalyst injection points are denoted on the Figure marked "A" through "D." A description of each of these potential injection points follows.

# Point A - Catalyst Introduced with Primary Coal Feed

In perhaps the simplest injection configuration, the catalyst is co-fed with the coal to the furnace. For a pulverized coal boiler, the catalyst would typically be combined with the coal prior to milling, thus taking advantage of the coal milling process to finely grind the catalyst. The catalyst's grinding properties, along with various coal and mill properties will influence the final particle size distribution of the catalyst, as introduced to the boiler. This, in turn, will likely influence the degree to which the catalyst dissolves into the molten ash, and thus will affect the overall success of the technology. In the case of a cyclone boiler where the coal is not finely milled prior to introduction into the furnace, the size of the catalyst pieces prior to combination with the coal will likely influence the size reduction of the catalyst within the furnace. This will potentially affect the overall process characteristics. In all cases, the ratio of catalyst to coal would typically be on the order of 1% or less, although levels up to 3% are discussed in the technology descriptions. For this co-feed scenario, pre-crushed catalyst would usually be stored in a silo or similar vessel and transported pneumatically to the introduction point, where it would be combined with the coal. Provisions for metering the catalyst as a function of coal feed rate would be required.

# Point B - Catalyst Introduced with Fly Ash Recirculation Stream

If a boiler is equipped with fly ash recirculation, as is the case with the European application of the technology, the catalyst may be introduced into the boiler by feeding it along with the fly ash recirculation stream. Specifically, the catalyst would need to be ground to a pre-determined size, preferably 200 microns (0.2 mm) or less. Finer particle size tends to facilitate dissolution of the catalyst into the molten ash phase, so finer grinding would be beneficial. The actual ratio of catalyst feed to fly ash recycle will depend heavily on the ash content of the fuel burned, and the general performance of the boiler. In any event, the appropriate catalyst feed rate would be consistent with the above scenario, equivalent to a ratio of about 3% maximum catalyst feed to coal.

# Point C - Catalyst Introduced with Limestone Feed

Limestone is utilized with coal-fired boilers for various purposes, including sulfur control, arsenic mitigation for SCR catalysts, and ash fusion point adjustment. For facilities equipped with limestone injection systems, catalyst-limestone co-feed may be an attractive option. Under this injection scenario, the catalyst is combined with the limestone prior to limestone injection, or prior to the combination of the limestone with the coal feed. Figure 3-1 shows the various limestone injection scenarios including coal-limestone co-feed (both prior to and after coal milling), and direct limestone furnace injection. Depending on the injection scenario selected, the catalyst may need to be pre-ground, ground along with the limestone, or milled as part of a coal-limestone-catalyst mixture. In all cases, the catalyst would require continuous metering in some fashion, unless limestone-catalyst batches were used, in which case more rudimentary catalyst measurement methods may be utilized. In any event, the resulting catalyst would need to be fed at a consistent rate compared to the coal entering the boiler, as in the other scenarios.

# Point D - Direct Catalyst Injection

Under this scenario, finely ground catalyst would be injected directly into the furnace in a manner similar to direct powdered limestone injection. This scenario would require basically a stand-alone catalyst storage, grinding, conveyance, and injection system. Typically, the catalyst would be pre-ground and stored for pneumatic injection into the boiler. The injection location and resulting mixing behavior would be important parameters to insure that the catalyst ultimately dissolved as part of the ash melt. In particular, catalyst particle size distribution and potential for carryover are likely to be critical factors. As with the other injection scenarios, the catalyst must be fed at a controlled and consistent rate with respect to the coal feed rate.

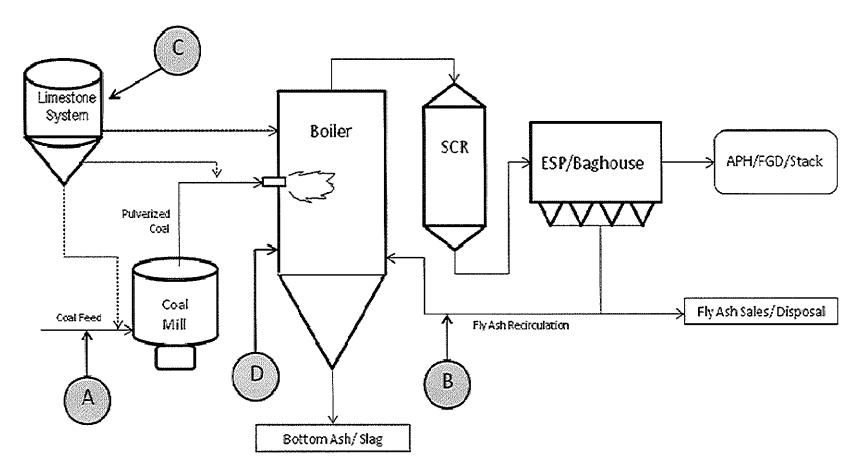


Figure 3-1 Generalized Boiler Schematic with Possible Catalyst Addition Points Noted

# **Applicability of Boiler Type**

The industry experience with the recycle technology has been limited to a slag-tap wet-bottom boiler. In the case of slag-tap furnaces, all options for catalyst introduction as described previously generally apply. Since slag-tap boilers require the fine milling/pulverization of the coal, it may be particularly attractive to simply combine the roughly crushed catalyst with the coal prior to milling. Alternatively the catalyst may be separately ground and introduced with the coal subsequent to milling, with ash recycle or with limestone feed, as previously discussed. If separate limestone milling is done on-site, the catalyst may be co-milled with the limestone.

In all cases, the applicability of the process to a particular boiler must be made on a case-by-case basis. Consideration must be given to the method of catalyst introduction, the catalyst physical and chemical characteristics, and the specific characteristics of the fuel, furnace, and other unit equipment.

#### **Process Performance**

The ultimate goal of the process is to fully incorporate spent catalyst into the boiler slag matrix, thus creating a homogeneous mixture which resists leaching of undesirable constituents, and has properties consistent with traditional slag. The exact process performance, especially in terms of parameters, such as slag melt point and leachability, will depend heavily on the boiler configuration, coal composition, catalyst composition, and the rate at which catalyst is fed to the furnace. In addition, the exact methodology of the process, such as catalyst grinding and introduction method, will affect the overall process performance. Very little full-scale information is available for the process, but the available patent literature discusses in some detail the process parameters and effectiveness. The available data are related to tests using a laboratory combustion chamber. These tests are discussed below in detail.

#### Laboratory Testing

Published data<sup>11</sup> associated with the process (see prior referenced patents) are limited to small-scale testing conducted in a laboratory test chamber. Tests were conducted using various proportions of catalyst to coal, both finely ground to produce a homogenous feed mixture. The firing configuration was consistent with a pulverized coal slag-tap type furnace. The coal was selected to provide a representative slag melt temperature and composition, consistent with the normal behavior for furnaces of this type. Note that the laboratory system was configured with no fly ash recirculation, which may limit the applicability of the data in some cases. Table 3-1 summarizes the laboratory testing conditions.

<sup>&</sup>lt;sup>11</sup> See data contained in the U.S. Patents 5,120,690, and 6,067,914.

Table 3-1
Summary of Laboratory Testing Conditions

Apparatus	Laboratory-scale combustion chamber operating in wet-bottom pulverized coal configuration (slag-tap)			
Coal	Low-volatile semi-anthracitic coal with behavior	normal melting		
Catalyst Composition	Component	Wt %		
	TiO <sub>2</sub>	75		
	SiO <sub>2</sub>	11		
	WO <sub>3</sub>	8		
	$V_2O_5$	1.8		
Catalyst Feed Rate	0 - 3% as proportion of catalyst in coal-	catalyst mixture		
Measured	Fly ash production rate			
Parameters	LOI in fly ash			
	Composition of tapped slag, fly ash, and slag deposits			
	Slagging/fouling behavior of furnace			

# Fly Ash Production Rate

The production rate of fly ash was measured as a function of the proportion of catalyst in the coal/catalyst feed mixture (i.e., "catalyst feed proportion"<sup>12</sup>) to the test furnace. Figure 3-2 shows the results of the testing, indicating that the fly ash production rate was constant up to roughly 3% catalyst feed proportion. The total mass of fly ash produced by the furnace did not increase, even though additional non-volatile components were being added. This indicates that the majority of the catalyst mass was incorporated into the tapped slag. In addition, as will be discussed below, the LOI of the resulting ash decreased with increasing catalyst addition, thus this reduction in fly ash LOI helped to reduce, in a relative sense, the total mass of fly ash that was formed. In any event, these data offer some reassurance that total fly ash loading will not measurably increase when catalyst is added. This is important to give some confidence that particulate collection devices will not be overburdened due to the implementation of the technology.

<sup>&</sup>lt;sup>12</sup> Catalyst feed proportion (%) = 100% x [catalyst feed (lb/hr)]/[coal feed (lb/hr) + catalyst feed (lb/hr)]

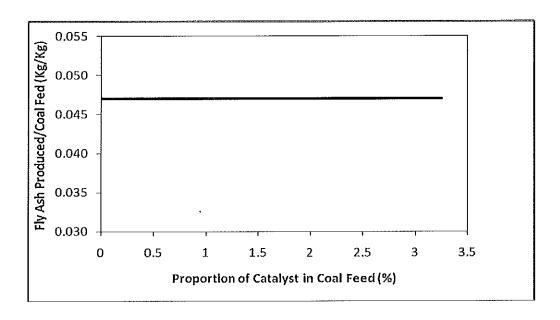


Figure 3-2
Fly Ash Production Rate vs. Catalyst Feed Proportion

# Loss-On-Ignition of Fly Ash

The loss-on-ignition (LOI) of the fly ash produced by the test furnace was measured as a function of catalyst feed rate. Results are shown in Figure 3-3. Interestingly, as the proportion of catalyst in the coal feed to the furnace increased, the LOI of the resulting fly ash decreased. The exact mechanism of this reduction is unknown. Additional testing is needed to validate LOI reductions.

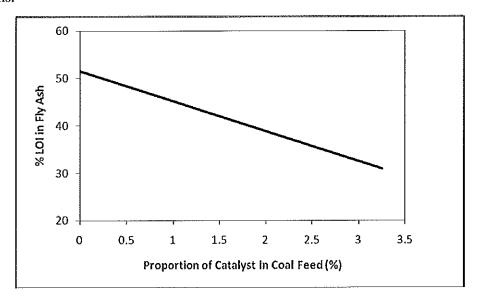


Figure 3-3
Fly Ash LOI vs. Catalyst Feed Proportion

# Composition of Tapped Slag, Fly Ash, and Slag Deposits

One of the fundamental considerations of the technology is the effect that it may have on the properties of the resulting tapped slag, fly ash, and slag deposits that are formed. The laboratory testing included chemical composition testing of notable parameters via x-ray fluorescence as a function of the catalyst feed proportion. Specifically, three principal catalyst components were tracked: titanium (as TiO<sub>2</sub>), vanadium (as V<sub>2</sub>O<sub>5</sub>), and tungsten (as WO<sub>3</sub>).

Figure 3-4 shows the influence of catalyst feed rate on titania concentrations in the furnace solids, up to a catalyst feed proportion of roughly 3%. The tapped slag showed the most marked increase in titania concentration, from roughly 2% to 9% by weight, while the fly ash showed a more moderate increase in titania concentration, from roughly 1.5% to 6%. This indicates that the titania partitioned more heavily toward the tapped slag phase. Interestingly, virtually no increase in titania was noted on the slag deposits. This indicates that, at least in terms of titania, the fouling deposits associated with the furnace and downstream surfaces will be unaffected by the addition of the catalyst (additional information related to the effects of catalyst addition on slag deposits/fouling is included in a subsequent discussion).

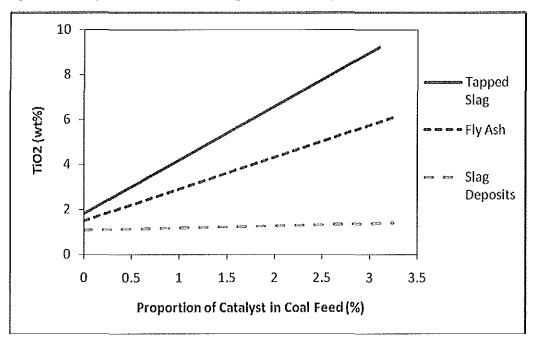


Figure 3-4
Titania Concentrations Vs. Catalyst Feed Proportion

Results for vanadium content of the combustion solids are shown in Figure 3-5. Across the tested catalyst feed proportion range, vanadium increased from rougly 0.07% to about 0.30% for the tapped slag, and from about 0.05% to 0.17% for the fly ash. No changes in the vanadium concentration of the slag deposits within and downstream of the furnace were noted.

These data are similar to the previously shown data for titania, except there was no noted vanadium concentration increase up to about 1% catalyst feed. This is somewhat counterintuitive and may be a data anomoly associated with the testing or analytical procedures. In any event, the data show that the vanadium tends to partition to the tapped-slag phase.

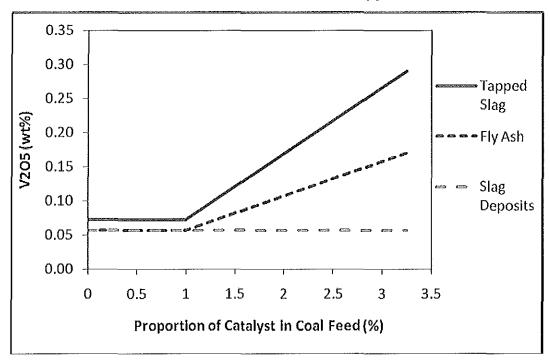


Figure 3-5
Vanadium Concentrations Vs. Catalyst Feed Proportion

As with with titanium and vanadium, tungsten appears to partition toward the tapped slag phase, as shown in Figure 3-6. The partitioning of tungsten toward the tapped slag phase appears to be particularly strong as compared to titanium and vanadium, with the tungsten concentration increasing from roughly 0.2% to about 1.4% for the tapped slag and about 0.06% to 0.3% for the fly ash. A very slight increase in tungsten concentration in the slag deposits was noted.

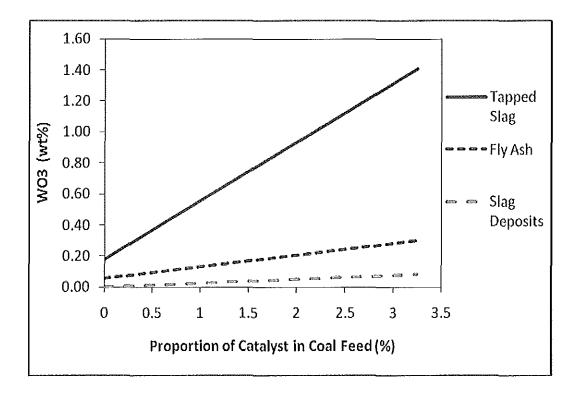


Figure 3-6
Tungsten Concentrations Vs. Catalyst Feed Proportion

# Case Study #1 - PRB Fuel

#### Background

A case study was performed using assumed parameters as a demonstration of the hypothetical application of the technology on a large wet-bottom boiler. Table 3-2 gives the general boiler operating parameters. The representative ultimate coal analysis is given in Table 3-3, and the nominal slag and catalyst compositions are given in Table 3-4. Note that the shown slag composition assumes 100% fly ash recycle and represents the expected base-line value with the assumption that no catalyst is fed to the boiler. For facilities without 100% fly ash recycle, the relative composition of ash and slag will differ somewhat, but the weighted average composition of both streams will match that shown in the table. The catalyst composition represents a nominal catalyst composition – specific catalyst designs will, of course, differ somewhat from the assumed formulation. For the given slag and catalyst compositions, only the major components are shown, thus the values do not necessarily sum to 100%.

Table 3-2 Assumed Boiler Design Characteristics

Parameter	Value
Name Plate MW	650
D. 11. m	Wet-bottom with
Boiler Type	100% fly ash recycle
Fuel	PRB Coal
Nominal Full Load Coal Burn Rate (dry basis)	300 tons/hr
Unit Heat Rate	7,000 MMBtu/hr
Full Load Nominal Flue Gas Flow Rate	1.4 X 10 <sup>6</sup> dscf/min

Table 3-3 Coal Ultimate Analysis

Parameter	Value
Btu/lb	9,845
Moisture (as received)	14,00%
Dry Basis Analy	/sis
Carbon	69.41%
Hydrogen	4.45%
Nitrogen	0.97%
Oxygen	17.82%
Sulfur	0.35%
Ash	7.00%
Total	100.00%

Table 3-4 Slag and Catalyst Composition

Component	Nominal Slag Composition – w/o Catalyst Addition (%)	Nominal Catalyst Composition (%)
SiO <sub>2</sub>	33.4	17
CaO	21.5	1.5
Al <sub>2</sub> O <sub>3</sub>	16.3	3
SO3	11.7	2
Fe <sub>2</sub> O <sub>3</sub>	5.2	0.25
MgO	6.4	0.2
Na <sub>2</sub> O	1.9	0.2
P <sub>2</sub> O <sub>5</sub>	1.2	
TiO <sub>2</sub>	1.2	66
BaO	0.6	
K <sub>2</sub> O	0.4	0.2
V <sub>2</sub> O <sub>5</sub>	<b>**</b>	1
MoO <sub>3</sub>		0.2
WO <sub>3</sub>	**	6

## Analysis Results

## General Process Parameters and Effects on Slag

Using the above assumed design specifications, an engineering analysis was performed examining the various critical process parameters and slag effects, including such parameters as catalyst mass flow rate and injection time, slag production rate, and resulting slag composition. The analysis was conducted as a function of the catalyst feed proportion, as defined previously. Catalyst feed proportions generally of less than 1% would be typical of the application, but higher feed rates of up to 3% were also considered.

The analysis is summarized in Table 3-5. Note that for this particular analysis, a catalyst batch of 200 tons (actual ceramic portion) was assumed. This would be roughly consistent with a single catalyst layer from a 650 MW boiler. (It is important to note, however, that the catalyst batch may not originate from the boiler that is utilized for the application of the process. Furthermore, multiple or partial catalyst layers may be treated as a process batch, and thus the actual amount of catalyst treated may vary greatly.) The analysis shows that the catalyst mass flow rate, ranging from roughly 1 to 6 tons/hr is quite small compared to the dry coal feed rate of roughly 300 tons/hr. This low feed rate would help to minimize impacts on mills, burners, and the general combustion characteristics of the boiler. Similarly, the total slag production rate is not markedly affected at low catalyst feed rates, up to 0.5% or so. As the catalyst feed rate increases,

however, the total slag production would increase noticeably, with almost 30% more slag being produced at 2% catalyst feed, and almost 50% more slag being produced at 3% catalyst feed, as compared to the base-line (no catalyst fed) condition. This higher slag production rate could impact boiler operations, and thus total slag production rate may be an important factor in determining the maximum catalyst feed rate. Note that these calculations are based on a coal with relatively low ash (7%). As the coal ash level increases, the relative affect on total slag production due to the catalyst addition would decrease. Using the assumed 200 ton batch of catalyst, the total catalyst feed time is quite lengthy at very low catalyst feed rates (roughly 10 days (261 hours) for the low catalyst feed rate of 0.25%). At a high catalyst feed rate of 3%, the total feed time is about 2 days (21.2 hours).

The slag composition values represent expected steady-state values. Clearly, there will be a transitional period just after the start of catalyst injection and after the completion of catalyst injection, in which the slag composition is transitional. The hold-up associated with the fly ash recycle stream will greatly affect the equilibrium times associated with the slag composition. In any event, it is clear that as the catalyst feed rate increases, the slag will become more and more enriched in the principal catalyst components. This is most evident for the primary catalyst component, titania. Specifically, the base-line slag titania concentration (without catalyst injection) would be quite low at roughly 1.2% (for the selected design fuel), but as the catalyst feed rate increases, the titania concentration increases markedly, to nearly 10% at a catalyst feed rate of 1%, and to just over 20% at a catalyst feed rate of 3%. As a result, principal coal slag components, such as silicon, calcium, and aluminum, become depleted with increasing catalyst feed rate. Based on the process literature, the higher titania content will generally have the effect of lowering the melting point of the slag, as well as that of the recycled ash. To maintain consistency of the overall boiler operation in terms of slag handling and downstream fouling, etc., it is recommended by the process inventors that the amount of titania in the total boiler feed (coal + catalyst) not exceed 2.25%. This parameter is shown in the summary table, where even the highest catalyst feed rate of 3% only produces a titania feed concentration of just over 2%. Thus, for this particular test case, even the high catalyst feed rate of 3% should not be problematic in terms of slag and ash behavior. Note that the prediction of ash fusion temperatures and viscosities is notoriously difficult, especially in cases where the ash constituents deviate from those found in common coals. Thus, laboratory tests examining ash fusion temperatures and viscosities on synthetic ash samples comprised of coal ash and ground catalyst would likely be beneficial in determining the slag properties for specific installations considering applying the recycle technology. In this case, the coal ash and catalyst would be highly specific to the proposed application, and a very accurate assessment of slag and ash melting and viscosity properties could be determined.

Table 3-5 Analysis Results as a Function of Catalyst Feed Proportion

Catalyst Feed Rate →	0% (baseline)	0.25 %	0.5%	0.75%	1%	2%	3%
Coal burned - dry basis (tons/hr)	305.7	305.7	305.7	305.7	305.7	305.7	305.7
Catalyst added at above feed rate (tons/hr)		0.8	1.5	2.3	3.1	6.2	9.5
Total feed rate of coal and catalyst (tons/hr)	305.7	306.5	307.3	308.0	308.8	312.0	315.2
Slag produced (w/o catalyst) (tons/hr)	21.4	21.4	21.4	21.4	21.4	21.4	21.4
Total slag produced with catalyst (tons/hr)	21.4	22.2	22.9	23.7	24.5	27.6	30.9
Total catalyst fed (ceramic only -tons)	200	200	200	200	200	200	200.0
Run time required to feed catalyst (hrs)		261.0	130.2	86.6	64.8	32.1	21.2
Conc. of TiO <sub>2</sub> in total boiler feed (%)	0.08	0.25	1.41	0.58	0.74	1.40	2.06
		Slag Compos	ition (%)			•	
SiO <sub>2</sub>	33.4	32.83	32.30	31.80	31.33	29.70	28.37
CaO	21.5	20.81	20.16	19.55	18.98	16.99	15.37
Al <sub>2</sub> O <sub>3</sub>	16.3	15.84	15.41	15.00	14.62	13.30	12.22
SO3	11.7	11.36	11.05	10.75	10.48	9.51	8.73
Fe <sub>2</sub> O <sub>3</sub>	5.2	5.03	4.87	4.72	4.58	4.08	3.68
MgO	6.4	6.19	5.98	5.80	5.62	5.00	4.50
Na <sub>2</sub> O	1.9	1.84	1.79	1.73	1.69	1.52	1.38
$P_2O_5$	1.2	1.16	1.12	1.08	1.05	0.93	0.83
TiO <sub>2</sub>	1,2	3.44	5.54	7.51	9.37	15.83	21.06
BaO	0.6	0.58	0.56	0.54	0.52	0.46	0.42
K <sub>2</sub> O	0.4	0.39	0.39	0.38	0.37	0.35	0.34
V <sub>2</sub> O <sub>5</sub>		0.03	0.07	0.10	0.13	0.23	0.31
MoO <sub>3</sub>		0.01	0.01	0.02	0.03	0.05	0.06
WO <sub>3</sub>		0.21	0.40	0.58	0.76	1.35	1.84

#### Arsenic Effects

The presence of arsenic in the processed catalyst will, of course, add to the total arsenic loading for the boiler. Depending on the fuels fired and the boiler operating configuration, this could impact downstream SCR installations, as well as toxic releases. The potential for these effects is greatly impacted by the coal calcium content; however, since it is well known that calcium (specifically free CaO) helps to mitigate arsenic poisoning of catalysts, since it acts as a binder for gaseous arsenic. This also helps to mitigate gas-phase arsenic releases. Using the parameters of the test case, the arsenic released from the processed catalyst was calculated in terms of equivalent coal arsenic concentration, for various catalyst feed rates and catalyst arsenic concentrations. These data are shown in Table 3-6. The calculated equivalent coal arsenic concentration represents the arsenic contributed by the catalyst, and thus is in addition to any arsenic contained in the coal itself. The equivalent coal arsenic concentration offers a convenient parameter for determining potential arsenic-related effects, since the effects of coal arsenic are relatively well understood. The table clearly shows that as catalyst arsenic level increases, or as catalyst feed rate increases, the equivalent coal arsenic levels increase in a commensurate manner. Note that the table represents a very wide range in potential catalyst arsenic concentrations. Generally, the low range of arsenic levels, perhaps 1,000 ppmw or less, would represent catalysts that were applied to boilers firing principally high-calcium coals, such as PRB coals, or catalysts which had very short flue gas exposure times. Higher levels of arsenic, greater than roughly 2,000 ppmw, would be generally consistent with catalysts applied to boilers firing principally bituminous coals. Very high arsenic levels, such as 10,000 to 20,000 ppmw, would be consistent with highly deactivated catalysts likely applied to high-arsenic bituminous coals, or catalysts which had very long exposure histories applied to bituminous fuels containing moderate to high levels of arsenic.

Table 3-6
Equivalent Coal Arsenic Concentration Due to Catalyst Arsenic Content

Catalyst Feed Rate	Arsenic in Catalyst (ppmw)									
	50	100	200	500	1000	2000	5000	10000		
↓(%)	Equivalent Coal Arsenic Concentration (ppmw)									
0.25	0.1	0.3	0.5	1.3	2.5	5.0	12.5	25.1		
0.5	0.3	0.5	1.0	2.5	5.0	10.1	25.1	50.3		
0.75	0.4	0.8	1.5	3.8	7.6	15.1	37.8	75.6		
1.0	0.5	1.0	2.0	5.1	10.1	20.2	50.5	101.0		
2.0	1.0	2.0	4,1	10.2	20.4	40.8	102.0	204.1		
3.0	1.5	3.1	6.2	15.5	30.9	61.9	154.6	309.3		

Given that coal calcium is an important mitigating factor with respect to arsenic, it is helpful to examine the arsenic related effects as a function of both calcium and arsenic in the coal. Often, arsenic-related effects on catalyst life are discussed in terms of the calcium/arsenic ratio, with higher ratios generally being beneficial at mitigating arsenic poisoning. For PRB-fired installations, where calcium is generally quite high, arsenic is not typically a factor in catalyst

deactivation, and calcium sulfate poisoning instead controls the deactivation rate. Figure 3-7 provides a convenient demonstration of the relative effects of calcium and arsenic on catalyst life. Note that this plot will differ for each specific catalyst installation and should be used as a rough guideline of relative effects only. Further, boiler specifics, such as fly ash recirculation, will greatly affect the rate of arsenic poisoning for any particular unit. The figure demonstrates two different poisoning regimes. At low constant calcium in the fuel (roughly <0.3%), arsenic poisoning is the primary deactivation mechanism, and increases in arsenic greatly affect catalyst life. As the calcium level increases, catalyst life improves, but only to a point (roughly 0.7-1.0%). As calcium increases past this point, calcium sulfate poisoning (PRB poisoning) begins to play a role in catalyst life, and further increases in calcium oxide decrease catalyst life.

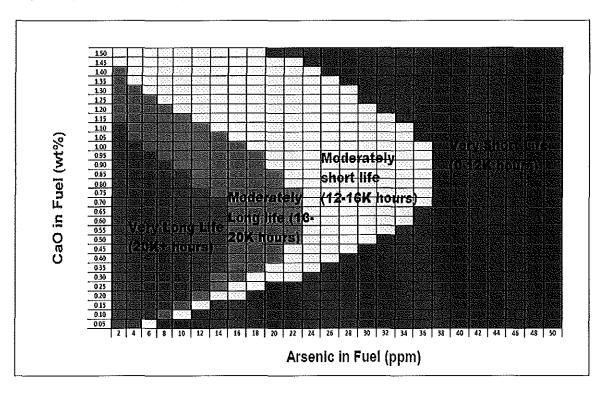


Figure 3-7
Comparative Catalyst Effect Due to Calcium and Arsenic Levels in Fuel

The PRB coal used in this case study had an ash calcium concentration of 21.5%, which equates to a coal CaO level of 1.5%, denoted by the area at the very top of the figure. Thus, catalyst life for this installation would be highly controlled by calcium sulfate poisoning, although the figure demonstrates that there will still be an effect, albeit muted, from increased arsenic in the fuel. It is very important to remember that this figure is based on fuel properties assuming a continuous burn of the particular fuel over the catalyst's life. Thus, short burn durations of any specific fuel will be "averaged" with the other fuels being burned over the catalyst's life. Given that the catalyst injection periods are quite short, on the order of several days, this will help to mitigate greatly any adverse impacts on catalysts which may be installed as part of the unit's SCR system.

In any event, an installation considering processing of spent catalyst may select an allowable maximum increase in the equivalent coal arsenic concentration. The selection of this value is somewhat subjective, and it is important to note that this allowable maximum will not affect the total arsenic fed to the boiler given a specific catalyst batch size and arsenic level. But by decreasing the catalyst feed rate and increasing the injection period, the "spike" in arsenic can be held to some specific value. The selection of this maximum arsenic equivalent may be selected based on installed catalyst protection, whereby limiting the "spike" in arsenic, the calcium to arsenic ratio is maintained at an acceptable level throughout the catalyst injection period. Alternately, the maximum may be selected to allow for greater capture of gas-phase arsenic as a basis for controlling arsenic emissions.

# Case Study #2 - Eastern Bituminous Fuel

## Background

A second case study was performed, similar to that above, for a boiler firing eastern bituminous coal. Table 3-7 gives the general boiler operating parameters. The representative ultimate coal analysis is given in Table 3-8, and the nominal slag and catalyst compositions are given in Table 3-9. The assumed catalyst composition is identical to that in the previous case study. As before, the shown slag composition assumes 100% fly ash recycle and represents the expected base-line value with no catalyst being fed to the boiler. Typical of coals of this type, the slag is composed principally of the oxides of silicon, aluminum, and iron. Unlike the previous case, calcium is not a principal component of the coal ash.

Table 3-7
Assumed Boiler Design Characteristics

Parameter	Value
Name Plate MW	650
Boiler Type	Wet-bottom with 100% fly ash recycle
Fuel	Eastern Bituminous
Unit Heat Rate	7,000 MMBtu/hr
Nominal Full Load Coal Burn Rate (dry basis)	250 tons/hr
Full Load Nominal Flue Gas Flow Rate	1.3 X 10 <sup>6</sup> dscf/min

Table 3-8 Coal Ultimate Analysis

Parameter	Value
Btu/lb	13,371
Moisture (as received)	2.00%
Dry Basis Analysis	(%)
Carbon	77.02%
Hydrogen	4.65%
Nitrogen	1.72%
Oxygen	5.63%
Sulfur	0.98%
Ash	10.00%
Total	100.00%

Table 3-9 Slag and Catalyst Composition

Component	Nominal Slag Composition – w/o Catalyst Addition (%)	Nominal Catalyst Composition (%)
SiO <sub>2</sub>	42.6	17
CaO	2.5	1.5
Al <sub>2</sub> O <sub>3</sub>	31.4	3
SO3	2.8	2
Fe <sub>2</sub> O <sub>3</sub>	13.8	0,25
MgO	1.1	0.2
Na <sub>2</sub> O	1.1	0.2
P <sub>2</sub> O <sub>5</sub>	0.2	
TiO <sub>2</sub>	1.3	66
BaO	0.5	
K <sub>2</sub> O	2	0.2
V <sub>2</sub> O <sub>5</sub>		1
MoO <sub>3</sub>		0.2
WO <sub>3</sub>		6

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# Analysis Results

# General Process Parameters and Effects on Slag

Using the above assumed design specifications, an engineering analysis was performed, as in the previous case study. The analysis results are summarized in Table 3-10. Note, again, that a catalyst batch of 200 tons was assumed. As with the previous test case, the total slag production rate is not markedly affected at low catalyst feed rates, up to 0.5% or so. As the catalyst feed rate increases however, the total slag production increases, with about 20% more slag being produced at 2% catalyst feed, and roughly 30% more slag being produced at 3% catalyst feed, as compared to the base-line (no catalyst fed) condition. This is a more moderate increase in slag production on a relative basis, than the previous case, since the eastern bituminous coal contained a higher proportion of ash (10% compared to 7% for the PRB coal). Using the same assumed 200 ton batch of catalyst, the total catalyst feed time is slightly longer than in the previous case due to the lower coal burn rate, and the resulting lower tonnage of catalyst being processed per hour. Roughly 13 days (311 hours) would be required to process the 200 tons of catalyst at the low catalyst feed rate of 0.25% (compared to 10 in the previous PRB case). At a high catalyst feed rate of 3%, the total feed time is about 2 days (25 hours), roughly 4 hours longer than in the previous PRB case.

As with the previous case study, the slag becomes more and more enriched in the principal catalyst components as the catalyst feed rate in increased. The total amount of titania in the boiler feed does not exceed the recommended 2.25% under any scenario, so even the highest catalyst feed rate of 3% should not be a concern with respect to this parameter.

Table 3-10 Analysis Results as a Function of Catalyst Feed Rate

Amount of Catalyst in Boiler Fuel Feed	0% (baseline)	0.25 %	0.5%	0.75%	1%	2%	3%
Coal burned - dry basis (tons/hr)	256.6	256.6	256.6	256.6	256.6	256.6	256.6
Catalyst added at above feed rate (tons/hr)	0.0	0.6	1.3	1.9	2.6	5.2	7.9
Total feed rate of coal and catalyst (tons/hr)	256.6	257.2	257.9	258.5	259.2	261.8	264.5
Slag produced (w/o catalyst) (tons/hr)	25.7	25.7	25.7	25.7	25.7	25.7	25.7
Total slag produced with catalyst (tons/hr)	25.7	26.3	26.9	27.6	28.2	30.9	33.6
Tons of catalyst fed (tons)	***	200	200	200	200	200	200
Run time required to feed catalyst (hrs)		311.0	155.1	103.2	77.2	38.2	25,2
Amount of TiO <sub>2</sub> in total boiler feed (%)	0.13	0.29	0.46	0.62	0.79	1.45	2.11
		Slag Compos	ition (%)				
SiO <sub>2</sub>	42.60	41.97	41.38	40.80	40.25	38.26	36.55
CaO	2.50	2.48	2.45	2.43	2.41	2.33	2.26
$AI_2O_3$	31.40	30.71	30.04	29.40	28.79	26.59	24.69
SO3	2.80	2.78	2.76	2.74	2.73	2.66	2,61
Fe <sub>2</sub> O <sub>3</sub>	13.80	13.47	13.15	12.85	12.56	11.50	10.60
MgO	1.10	1.08	1.06	1.04	1.02	0.95	0.89
Na <sub>2</sub> O	1.10	1.08	1.06	1.04	1.02	0.95	0.89
$P_2O_5$	0.20	0.20	0.19	0.19	0.18	0.17	0.15
TiO <sub>2</sub>	1.30	2.88	4.40	5.85	7.24	12.27	16.58
BaO	0.50	0.49	0.48	0.46	0.45	0.42	0.38
K <sub>2</sub> O	2.00	1.96	1.91	1.87	1.83	1.69	1.57
$V_2O_5$		0.02	0.05	0.07	0.09	0.17	0.24
$MoO_3$	-	-	0.01	0.01	0.02	0.03	0.05
WO <sub>3</sub>	-	0.15	0.29	0.42	0.55	1.02	1.42

#### **Arsenic Effects**

The potential for adverse effects from arsenic contained in the processed catalyst on downstream installed catalyst or in terms of arsenic emissions is greatly increased for the eastern bituminous coal case, since the coal does not naturally contain high levels of calcium. The values previously calculated relating the equivalent coal arsenic concentration to the catalyst feed rate and arsenic concentration in the processed catalyst apply to this test case as well (as shown in Table 3-11), since the calculation is based only on catalyst being fed as a proportion of the coal that is fed. Again, the values represent the coal equivalent arsenic concentrations from the catalyst itself, and are in addition to any native arsenic in the coal. Even though the coal equivalency values do not change, it should be noted that the equivalent gas-phase arsenic levels will change somewhat, however, since they are dependent on the coal feed rate and the resulting flue gas volumes produced.

Table 3-11
Equivalent Coal Arsenic Concentration Due to Catalyst Arsenic Content

Ontoloot	Arsenic in Catalyst (ppmw)									
Catalyst Feed Rate	50	100	200	500	1000	2000	5000	10000		
•(%)	Equivalent Coal Arsenic Concentration (ppmw)									
0.25	0.1	0.3	0.5	1.3	2.5	5.0	12.5	25.1		
0.5	0.3	0.5	1.0	2.5	5.0	10.1	25,1	50.3		
0.75	0.4	0.8	1.5	3.8	7.6	15.1	37.8	75.6		
1.0	0.5	1.0	2.0	5.1	10.1	20.2	50.5	101.0		
2.0	1,0	2.0	4.1	10.2	20.4	40.8	102.0	204.1		
3.0	1.5	3.1	6.2	15.5	30.9	61.9	154.6	309.3		

The eastern bituminous coal selected for this case study has an ash CaO concentration of 2.5%, an order of magnitude lower than PRB coal in the previous case study. This 2.5% ash concentration converts to an equivalent coal CaO content of just 0.25%. Examining Figure 3-8<sup>13</sup> (repeated for convenience), one can see that this level of calcium is much lower on the figure, corresponding to a regime that is dominated by arsenic poisoning. In this regime, catalyst life will be very sensitive to arsenic level. The arsenic in the catalyst will undoubtedly impact the catalyst poisoning rate, but the relative effect will be tempered by the amount of arsenic that is native to the coal, as well as the duration of the catalyst process period. As previously discussed, catalyst is fed only for a very short duration compared to a catalyst typical exposure time on a particular fuel, thus the "averaging" effect of the arsenic will help to mitigate impacts. Further, the total arsenic fed to the boiler will not change due to a change in catalyst feed rate (assuming the catalyst batch size and characteristics do not change), thus it may be immaterial whether

<sup>&</sup>lt;sup>13</sup> As mentioned previously, the figure should only be used as a guideline as to relative effects. Each specific unit will differ from the example given here, and other process parameters such as fly ash recycling may greatly affect the relationship of coal arsenic and catalyst life.

catalyst is injected fast or slow. In any event, if one selected a catalyst injection rate corresponding to an increase in arsenic of roughly 20 ppmv (fuel equivalent), a moderately deactivating arsenic level, this would then provide a basis for determining the required injection period. This limited level of allowable arsenic increase may also help to reduce emissions by managing a high-arsenic "spike" associated with catalyst injection. In any event, it is clear that the catalyst injection rate must be based on a case-specific analysis, taking into consideration the catalyst arsenic level, coal composition, and other balance-of-plant and operating parameters.

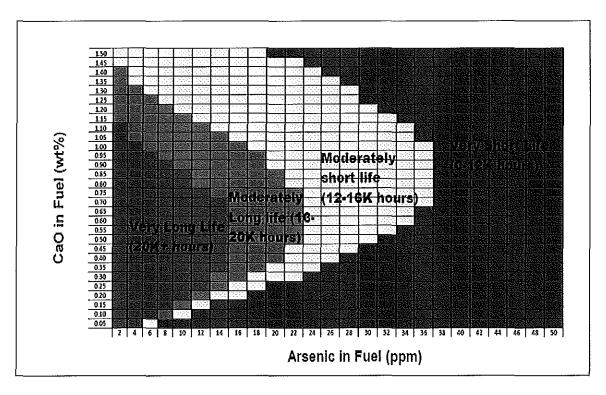


Figure 3-8
Comparative Catalyst Effect Due to Calcium and Arsenic Levels in Fuel

An alternative arsenic-related analysis, which is perhaps more meaningful for bituminous fuels, at least from a general perspective, is to examine the total arsenic which is potentially released from the processed catalyst, as compared to that released from the coal combustion. If one assumes, for instance, that a typical SCR catalyst layer will have 16,000 hours of flue gas exposure, the total mass of arsenic to which the catalyst is exposed can be calculated using the coal arsenic concentration. Applying this basis to the boiler in the current case study, the coal feed rate of 256 tons/hr will result in a total of 2.9 million tons of coal being burned for the unit over the 16,000 hour time period (assuming a 70% capacity factor). Using this basis, Table 3-12 shows the total arsenic released as a function of coal arsenic content. For an extremely low coal arsenic concentration of 2 ppmw, the calculation shows that roughly 11,000 lbs of arsenic will potentially be released from the coal, while a very high coal arsenic content of 50 ppmw will result in a release of nearly 300,000 lbs of arsenic. These values can then be compared to the potential arsenic released from the processing of a catalyst batch, as a function of catalyst arsenic concentration. The results of this calculation are shown in Table 3-13. As in the above

calculations, a 200 ton catalyst batch has been selected as the calculation basis. A comparison of the two tables shows that, in general, the potential release of arsenic from the coal is vastly greater than the potential release from the catalyst being processed. The actual difference, of course, depends greatly on the coal and catalyst arsenic levels, as well as the total tonnage of catalyst being processed. If one chooses an average eastern bituminous coal arsenic concentration of 20 ppmw, the table shows potential coal-released arsenic to be roughly 115,000 lbs. Again, using 200 tons of processed catalyst as a basis, this number far exceeds the expected arsenic released from the catalyst, even if the catalyst contained a very high arsenic concentration of 10,000 ppmw (i.e., 115,000 lbs of arsenic released from the coal, compared to a maximum of 4,000 lbs of arsenic released from the catalyst). Based upon this analysis, the occasional processing of catalyst will typically not result in overall arsenic exposures over the life of the catalyst that are very different from the catalyst's native exposure from the coal itself. Of course, this is highly dependent on the amount of catalyst being processed. If catalyst is processed frequently, and in high tonnages, then the impact will be greater. Further, if the typical coal arsenic concentration is very low, and the processed catalyst arsenic concentration is high, the relative impact of the catalyst arsenic loading on the unit will be greater.

It is important to note that the above analysis assumes an arsenic chemistry that is identical for arsenic released from both the coal and the catalyst. If the arsenic speciation differs between the two feed streams, and this speciation results in a difference in the relative rate of deactivation from the arsenic contained in the two sources, then the overall analysis may be impacted. Further, the analysis is performed on a total arsenic throughput weight basis and is illustrative on a comparative basis (total coal arsenic versus total catalyst arsenic released). For a boiler using fly ash recirculation, the actual gas-phase arsenic will be impacted by this recycle stream, which in turn will impact an installed catalyst's deactivation rate. The comparative analysis based on relative amounts of arsenic available from the coal and catalyst still holds for the recycle scenario, but the actual amount of arsenic to which the catalyst is exposed will be greater than the values indicated, since the arsenic is effectively recycled in an ash recycle scenario.

#### Impacts of Limestone Addition

The above analyses were performed assuming that no additional calcium, beyond that contained in the coal, was fed to the boiler. Of course, calcium addition, usually in the form of limestone, is sometimes used to mitigate arsenic poisoning. Limestone addition offers a convenient and flexible method of mitigating catalyst arsenic poisoning and can be tailored to mitigate any additional arsenic that is introduced into the boiler due to the processing of spent catalyst. Specifically, calculations similar to those used in the above the coal arsenic equivalency tables can be used to estimate the additional arsenic loading that a boiler will experience due to the processing of spent catalyst. This provides a basis for determining the required additional limestone needed to mitigate the increased arsenic. Thus, facilities equipped with limestone injection will have added flexibility when applying the recycle technology. This added flexibility, plus the added flexibility that limestone injection systems add in terms of physically injecting the catalyst, make boilers equipped with limestone injection particularly attractive for implementing the recycle technology.

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Table 3-12 Potential Total Arsenic Released Due to Catalyst Due to Coal Combustion

Coal Arsenic Conc. – Dry Basis (ppmw)	2	4	6	8	10	20	30	40	50
Total Arsenic Released from Coal (lbs) (16,000 hr burn time for unit firing 256 tons/hr coal @ 70% capacity factor)	11,496	22,991	34,487	45,983	57,478	114,957	172,435	229,914	287,392

Table 3-13
Potential Total Arsenic Released Due to Catalyst Arsenic Content (200 ton basis)

Catalyst Arsenic Conc. (ppmw)	50	100	200	500	1,000	2,000	5,000	10,000
Potential Arsenic Released (lbs)	20	40	80	200	400	800	2,000	4,000

#### **Economics**

The economics of slag incorporation will depend heavily on factors, such as the boiler modifications needed for catalyst injection, the costs associated with permitting, and the amount of catalyst to be processed. As a result, no detailed economics can be evaluated which would be meaningful for any particular boiler/utility. Boilers which already have provisions for pulverizing and injecting non-coal materials, such as those equipped with limestone injection, may be able to incorporate catalyst injection at a very low cost, since physical equipment modifications may be minimal. Similarly, if a pulverized coal slag-tap boiler is utilized, and the catalyst can be milled along with the coal, the physical modifications required for the boiler may be minor. However, in all cases, some provision will have to be made for catalyst preparation, storage, and feed metering. These boiler modifications would in large part be a fixed cost, so larger volumes of catalyst processed tend to reduce the \$/ton catalyst processing cost. Costs can be minimized on a \$/ton basis by selecting a single boiler for the processing of the entire utility's spent catalyst production, assuming that transport costs do not heavily influence the economics. Ultimately, these \$/ton costs must be compared to the costs of other recycle/re-use routes, as well as the offset costs of landfill disposal (taking into account factors such as liability and environmental good-will).

#### Conclusions

The available data and analyses indicate that, at least from a fundamental technical standpoint, catalyst injection into wet-bottom boilers is a feasible recycle scenario. The applicability of the technology is highly specific to both the characteristics of the catalyst potentially being processed and the characteristics of the proposed boiler and downstream equipment. Some highlights of the findings follow.

- Process is generally only applicable to wet-bottom boilers.
- Boilers with high fly ash recycle ratios are most attractive, but not required for the technology.
- Multiple mechanical methods for introducing the catalyst into the boiler are patented.
- Processed catalyst characteristics, especially in terms of arsenic concentration, will impact
  downstream SCR systems. Coal and flue gas properties (arsenic to calcium rations) must be
  evaluated in a case by case basis. Experience is limited to tail-end SCR applications.
- Boilers equipped with limestone injection are particularly attractive for use in this recycle scenario.
- General process parameters and impacts will be a strong function of catalyst feed rate, tonnage of catalyst processed, and frequency of processing.
- Implementation of the technology is highly case-specific, requiring careful analysis of the project specifics prior to implementation.
- Laboratory analyses may be highly beneficial in determining the effects on various slag parameters for potential specific cases, especially melt point and viscosity effects.

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• Economics will be highly case-specific, depending heavily on the ease with which the technology can be implemented for any particular boiler, and the total amount of spent catalyst that will be processed.

More work will be required to fully evaluate the technical aspects of the technology, potentially relying on laboratory and pilot-scale studies. In addition, other logistical and regulatory issues must be addressed prior to implementation. These include obtaining the required environmental permits, making appropriate arrangements for catalyst crushing, storage and injection, and insuring worker health and safety when implementing the technology. All of these aspects of process implementation would need to be addressed in a highly case-specific manner, most likely after a specific target installation has been identified.

4

# UTILIZATION OF SPENT CATALYST IN THE CEMENT MANUFACTURE (CO-PROCESSING)

#### Introduction

Prior EPRI work identified portland cement manufacture as a possible utilization route for spent SCR catalyst. Some basic laboratory data from published sources was reported which addressed the impacts of high-titania materials on cement quality. Moderate additions of titania were found to act as a mineralizer, lowering the viscosity of the clinker liquid phase, and various studies have shown that titania can be incorporated successfully into cement clinker up to about 5 wt% in normal clinker phases. Given that this utilization route appeared to be potentially attractive, further investigations were conducted to determine the feasibility, technology details, logistics, and economics.

# **Cement Manufacturing Process Description**

The manufacture of cement includes three basic steps: 1) the grinding of the "raw mix" typically consisting of limestone and clay or shale to make a fine powder (with other components being added for varying purposes, including incorporation of recyclable materials into the product), 2) the heating of the raw mix in a kiln to a sintering temperature of up to roughly 2,750°F to convert the raw mix into cementitious compounds, and 3) grinding the resulting product, termed "clinker" to make cement. The vast majority of portland cement produced worldwide is manufactured in rotary cement kilns. Rotary kilns provide the thermal efficiency, material contact time, temperatures, and solids handling characteristics required for large-scale efficient commercial production of portland cement. Historically, rotary kilns have also been favored for the co-benefit of recycling waste materials. In the case of organic solvents, kilns effectively utilize the materials as a fuel, while providing for complete burnout of potentially hazardous organic compounds. Other potentially hazardous non-combustibles that may be present as contaminants in the solvents, such as heavy metals, are captured at various rates depending on the volatility of the constituents and the specific characteristics of the kiln and associated equipment. Capitalizing on the kiln's innate design nature, high organic burn-out, and pollutant capture capabilities, solid waste materials have also been incorporated into kiln feeds with good success. This processing of solid waste is typically termed "co-processing." Materials such as used rubber tires and other combustibles are commonly used since they provide both a source of fuel for the kiln and offer an environmentally sound recycle service. Other solid waste materials may provide a source of raw materials, offsetting the required mineral feed for the kiln.

<sup>&</sup>lt;sup>14</sup> See EPRI Technical Report, "Selective Catalytic Reduction (SCR) Recycle, Re-Use, and Disposal Options," Product ID 1017554, 12/16/09.

# Rotary Kiln Design

Rotary kilns for cement production vary greatly in detailed design, depending on such factors as type of fuel burned, feed material characteristics, required processing temperature and contact time, and desired kiln capacity. All rotary kilns do, however, conform to some basic design characteristics and have basic components in common, such as a rotating refractory lined steel tube which represents the "kiln" itself, combustion air and fuel injection systems, raw material feed systems, and provisions for cooling the product (and typically for pre-heating the raw feed and combustion air).

A generalized rotary kiln diagram is shown in Figure 4-1. The overall system operates in a countercurrent flow mode, where raw feed is introduced at the upper "cool-end" of the kiln, and where exhaust gases exit. The opposite lower end or "hot-end" contains the primary fuel burners, and it is in this location that the cement clinker product exits. The kiln itself is composed of a refractory lined tubular vessel of several meters in diameter and typically around 100 meters in length, although kilns of 6 meters or more in diameter and several hundred meters in length have been utilized historically. The exact kiln design will reflect different operating needs as a function of fuel, feed, and product specifications, as well as typical engineering design variations and capacity requirements. Thus, any specific kiln may deviate substantially from the size and general design discussed above.

Kilns are installed at a slight incline of 1 to 4° to facilitate the slow travel of the feed materials through the kiln. Rotational speed is typically 0.5 to 4 rpm. Incline and rotational speed are selected (along with numerous other parameters) to control the throughput and final quality of the cement product. Since the processed clinker becomes semi-molten at the higher-temperature areas of the kiln, it is extremely important that material flow be carefully managed throughout the process.

Kiln thermal efficiency must be carefully managed to maintain a low-cost competitive product. Heat recovery is extensively utilized and constitutes a major focus of operations. Kilns will have heat recovery systems at both the "hot-end" of the kiln where fuel and air are introduced and where product is removed, and at the "cool-end" where raw feed is introduced and exhaust gas exits. At the hot-end, the thermal energy available from the very hot clinker product is captured by a heat-exchanger, which preheats incoming combustion air, similar to the function of the air preheater on a coal-fired boiler (although the combustion air may be heated to much higher temperatures than is common to coal-fired boilers, as high as 1,500°F). Although the heat exchanger acts as an air preheater, the system is termed a "cooler" since the product is cooled to a relatively low temperature (~200°F) for ease in product handling. At the opposite hot-end of the kiln, hot flue gases are used to pre-heat the incoming kiln feed material, thus this system is generally termed the "preheater." A favored method of preheating is to use a cascade (series) of cyclones, which serve the dual purpose of preheating the incoming feed and removing particulate from the outgoing exhaust gas stream. Although only three cyclones are shown in the diagram, four or more are typical in modern installations, and multiple parallel trains of cyclones may be utilized.

During the manufacture of cement clinker, three general temperature zones are often referenced: a drying zone, a calcining zone, and a clinkering zone. These three zones, along with their corresponding temperatures, are included in Figure 4-1. Although these zones are depicted in the

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figure as distinct zones within the rotary kiln, in practice, a portion of the process corresponding to the zones may be conducted outside of the kiln. For instance, drying and calcining may be performed largely in the raw mix pre-heater section of the overall system, utilizing ancillary fuel firing to raise the raw mix temperature into the calcining regime. This operating philosophy helps to minimize kiln size, since a portion of the fuel combustion occurs outside of the kiln itself. In any event, as the temperature of the raw mix is raised, distinct chemical reactions occur which are associated with the formation of the cementitious compounds found in the product clinker. Figure 4-2 shows the primary reactions that occur and their corresponding temperature ranges. The final clinker product is characterized by a partially melted (20-30% by weight) granular material with relatively high amounts of alite (Ca<sub>3</sub>O·SiO<sub>4</sub>), the principal mineral phase of the cement. Fine grinding of the clinker produces the final cement product.

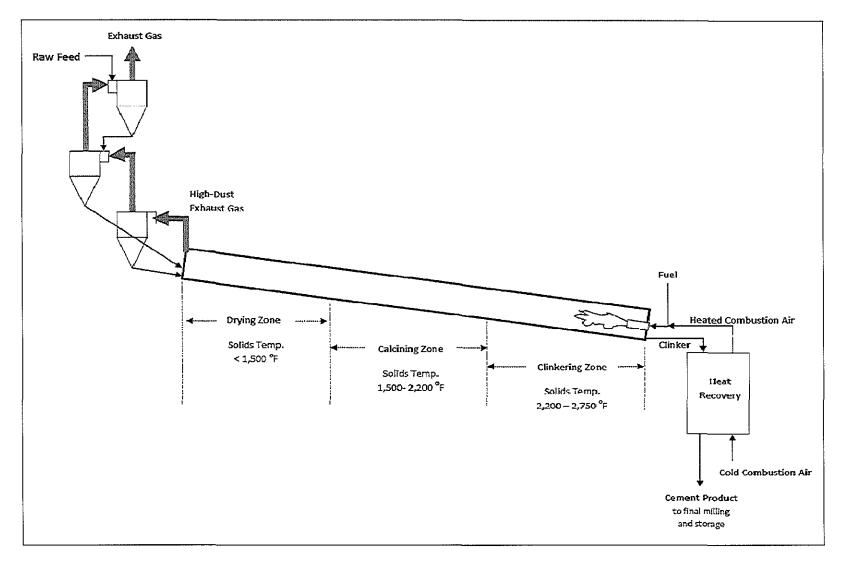


Figure 4-1 Generalized Schematic of Rotary Cement Kiln

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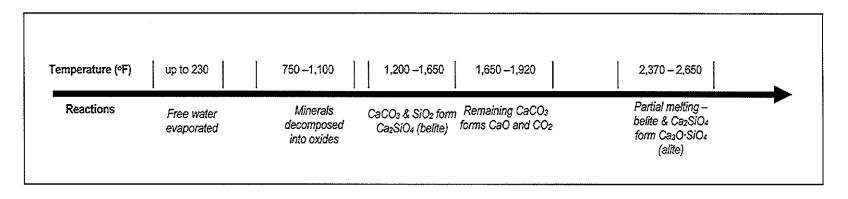


Figure 4-2 Primary Cement-Forming Reactions and Corresponding Temperatures

#### Cement Kiln Emissions

Cement kilns have emission concerns similar to those associated with coal-fired boilers in the utility industry. Namely, such flue gas constituents as particulate matter, CO<sub>2</sub>, NOx, SO<sub>2</sub>, CO, unburned hydrocarbons, halogens, and trace elements, are of interest. CO<sub>2</sub> is produced from both the decarbonization of limestone, and the fuel used to fire the kiln. Dust is typically controlled using various methods, which often include ESPs or baghouses as polishing devices, with the majority of particulate being collected by cyclone preheaters (overall 99.999% particulate removal is common for cement kilns processing waste materials). NOx is typically controlled using staged combustion or SNCR, while SO<sub>2</sub> is typically controlled inherently due to the formation of alkali sulfates, which prevent free SO<sub>2</sub> release. The high temperatures and relatively long residence times within the kiln limit unburned hydrocarbon emissions. Halogen compounds are typically emitted only in small quantities owing to the formation of alkali-halogen compounds, although a recycle within the system may produce very high internal halogen concentrations.

Perhaps of most interest to the current study is the fate of trace elements. Trace element emissions are ultimately controlled by the characteristics of the kiln feed and fuel inputs, the collection efficiency of the particulate control devices, and the exact design details of the system as a whole. Volatile trace elements may evaporate in high-temperature zones of the kiln, only to be condensed in cooler sections, such as during feed pre-heating. This may result in the formation of cycles within the kiln, as well as cycles within external devices. Overall, trace elements are typically emitted to an extremely small extent due to the inherent retention capacity of the kiln and feed preheater. Non-volatile metals, such as arsenic, vanadium, and nickel, are typically completely bound in the cement clinker, while other elements, such as lead and cadmium, may react with chlorides and sulfates. The relatively volatile compounds condense within the cooler kiln sections and are precipitated in the preheater. This forms a recycle loop ultimately forcing the majority of the metals to the clinker phase. Unlike most other trace metals, mercury can be problematic for kilns, owing to its high volatility. As such, cement kilns have recently been the target of relatively stringent mercury control regulations.

# Co-Processing of Waste Materials in Cement Manufacture

#### Introduction

Waste material co-processing in cement kilns generally falls into two categories: co-processing of wastes that provide thermal energy to the process and co-processing of wastes that ultimately become incorporated into the cement product. The processing of spent SCR catalyst falls into the latter category, since there is no BTU value in the catalyst. The co-processing of waste materials typically serves a dual benefit; waste materials are effectively recycled/re-used thereby avoiding disposal, and the required kiln feed is reduced since the waste replaces a portion of the normal feed required (either mineral or fuel feed).

Sound environmental management practices generally adhere to the hierarchy as shown in Figure 4-3. The hierarchy focuses on waste avoidance and minimization as the preferred methodology for the bulk of potential waste materials. Direct recycling and re-use follows in preference (this includes such familiar direct recycle routes as paper and aluminum recycling).

Following these management techniques is the co-processing of waste. Least attractive is landfilling (including landfilling with chemical or physical pretreatment), followed by uncontrolled disposal. Catalyst reconditioning (including cleaning, rejuvenation, and regeneration) generally falls into the category of "Direct Recycle and Re-Use" and is preferable to disposal if reconditioning is feasible. Given that virtually all catalysts that are not reconditioned are currently landfilled, the development of cement kiln co-processing for spent catalysts is highly desirable.

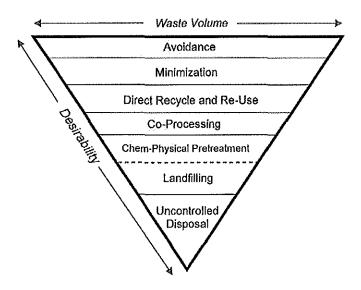


Figure 4-3
Preferred Waste Management Hierarchy

# Types of Wastes Co-Processed

# General Waste Types

Historically, a wide variety of waste materials have been co-processed in cement kilns. Kilns that do accept waste materials evaluate the incoming material on a case-by-case basis to establish the potential effects on the process. Table 4-1 shows some typical materials and their industrial sources that are common to cement kiln co-processing (focusing on materials that are not BTU sources). The primary compounds inherent in the wastes are also shown – typically these compounds act as beneficial mineral sources. The substitution rate (proportion of waste in kiln feed) is usually quite small for most waste materials, on the order of 1% or less, although fly ash substitution rates may be considerably higher. The exact rate of substitution will be determined on a case-by-case basis, with factors such as raw feed composition, waste composition, potential cement effects, operational effects, and emissions effects all being considered.

Table 4-1
Common Wastes Co-Processed in Cement Kilns

Primary Compounds	Waste Material	Industrial Sources			
01	Coating residues	Foundries			
Clay Mineral/ Al <sub>2</sub> O <sub>3</sub>	Aluminum recycling sludge	Aluminum industry			
1' 10.00	Industrial lime	Neutralization process			
Limestone/ CaCO <sub>3</sub>	Lime sludge	Sewage treatment			
Silicates/ SiO <sub>3</sub>	Foundry sand	Foundries			
	Contaminated soil	Soil Remediation			
Iron Oxide/ Fe₂O₃	Roasted pyrite	Metal surface treatment			
	Mechanical sludge	Metal industry			
	Red sludge	Industrial waste water treatment			
Si-Al-Ca-Fe	Fly ashes	Incinerator			
	Crushed sand	Foundries			
Fluorine	CaF <sub>2</sub> filter sludge	Aluminum industry			

The above table lists common co-processed wastes, but in practice a very large number of potential wastes are applicable to cement kiln co-processing. These include various materials such as mixed dirty paper, cartons, plastics, textiles, packaging material, tires, wood, sorted wastes, oils, solvents, and hospital wastes. As mentioned above, specific wastes, especially unfamiliar wastes, must be evaluated on a case-by-case basis to determine if they can be accepted for co-processing. Figure 4-4 shows an example generalized decision tree that helps show the types of evaluations that may be conducted when considering a waste for co-processing. Each individual co-processor will have specific internal methodologies and requirements for accepting wastes. Ultimately, the waste acceptance decision will be a function of many factors including economics, commercial issues, and varied technical issues related to the kiln and waste characteristics.

#### Hazardous vs. Non-Hazardous Waste Designation

The waste designation (hazardous or non-hazardous) will affect how the waste is handled, transported, and ultimately treated. Specific kilns and associated pre-processing facilities will have different capabilities in terms of their ability to accept hazardous wastes. In addition, there may be a difference in a kilns ability to accept liquid hazardous wastes versus solid hazardous wastes, since many highly desirable high-BTU wastes are liquid, and thus there is generally an incentive to permit for this type of waste. Clearly, the waste designation of the catalyst will greatly affect what facilities are able to pre-process and co-process spent catalyst, and a clear understanding of the waste's potential designation is an important aspect in determining appropriate potential treatment facilities.

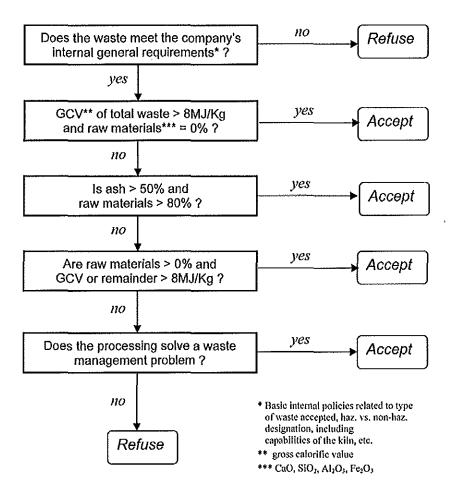


Figure 4-4
Example Generalized Decision Tree for Waste Acceptance

# **Case Study**

### Introduction

Given that the applicability of any particular waste to cement kiln co-processing must be determined on a case-by-case basis (unless the waste material is known to the industry), it was decided that a case study should be performed in conjunction with a cement manufacturer/co-processor using an actual spent catalyst sample. This would provide the most definitive information possible and would generally follow the initial steps of a full-scale co-processing project where the waste catalyst is initially subjected to analysis and consideration for acceptance.

## Hypothetical Source Unit and Catalyst Amounts

Table 4-2 shows the hypothetical source unit characteristics and the assumed amount of catalyst to be treated. The unit represents a relatively large PC unit, with one layer of catalyst requiring disposal. This "hypothetical" unit was modeled after an actual unit from which an actual spent catalyst was obtained for evaluation. The case assumptions result in a moderately sized "batch" (248 tons/225 modules) of catalyst being processed.

Table 4-2
Assumed Spent Catalyst Source Information and Quantity

Parameter	Value
Boiler Size	900 MW
Boiler Type	Wall-Fired PC
Coal Type	Eastern Bituminous (Central Appalachian)
Catalyst Type	Honeycomb
Catalyst Exposure Hours	22,000
Amount of Catalyst Processed	1 layer
	225 modules
	2,200 lbs/module
	248 tons - total module weight
Amount of Ceramic Portion Processed	150 tons <sup>15</sup>
Total Bulk Metals Recovered	98 tons
Transport Distance	300 miles

## Catalyst Characteristics

An actual catalyst sample was acquired for use in the study, as mentioned above, with an exposure history roughly conforming to the hypothetical case scenario. One honeycomb element, roughly crushed, was sent to the co-processor for evaluation. They performed a compositional evaluation of the catalyst as shown in Table 4-3. This provided the basic characterization of the material for their evaluation.

The elemental analysis showed that the majority of the catalyst sample was composed of titania (roughly 60%) as would be expected. Other principal catalyst constituents were also noted, such as silicon, tungsten, and vanadium. As usual, many other constituents were present, mainly related to fly ash contamination. Note that in the case of silicon, the total amount present on any particular aged catalyst sample is typically a combination of both silicon in the catalyst (asmanufactured) and silicon in the fly ash. Not all catalyst formulations contain silicon, but the levels can be appreciable in certain catalyst formulations. Of particular interest is the arsenic level of the catalyst sample. This sample showed roughly 5,000 ppmw of arsenic, a moderately

<sup>&</sup>lt;sup>15</sup> Based on a ceramic proportion of 60%.

high level of arsenic, and consistent with arsenic contamination associated with catalyst exposed long-term to eastern bituminous coal flue gas. Another analyte of interest, mercury, was below the detection limit of 0.02 ppmw.

Table 4-3
Catalyst Sample Bulk Elemental Composition

Analyte	Value	Analyte	Value
Moisture (%)	6.92		
LOI (%)	3.32		
Chloride (%)	0.02		
Principal •	Oxldes (%)		
SiO <sub>2</sub>	14.41	Trace Constit	tuents (ppmw)
Al <sub>2</sub> O <sub>3</sub>	5.89		
Fe <sub>2</sub> O <sub>3</sub>	2.11		
CaO	1.48	Antimony	<100
MgO	0.14	Arsenic	4547
Na <sub>2</sub> O	0.31	Barium	109
K₂O	0.52	Beryllium	5
SO <sub>3</sub>	1.69	Cadmium	80
TiO <sub>2</sub>	60.7	Lead	<10
$P_2O_5$	0.19	Mercury	<0.02
ZnO	<0.01	Silver	<2
Mn <sub>2</sub> O <sub>3</sub>	<0.01	Selenium	<20
SrO	0.02	Thallium	<20
Cr <sub>2</sub> O <sub>3</sub>	0.02	Nickel	<10

### Cement Manufacturer/Co-Processor Evaluation

The cement manufacturer selected for the study is a large manufacturer with a global presence. Waste co-processing is a significant pillar of their business model. All functions associated with co-processing are conducted through a dedicated wholly owned subsidiary. Given their significant market share and national service network, the company is well poised to offer services to the utility industry as a whole.

The company has several operational cement kilns with each having specific characteristics. Specific facilities are targeted for the co-processing of waste, and part of the waste evaluation is to determine which facility is most applicable for processing the waste according to the waste characteristics, quantity, and originating location. Much of the evaluation process is internal and proprietary, and therefore not transparent to EPRI. A typical waste evaluation is predictive in nature, using waste analyses to predict the effect on overall cement kiln operation and product quality, based on the known behavior of the various waste constituents.

Using internal characterizations and general information related to expected catalyst quantities, etc. the co-processor evaluation resulted in several primary findings, as summarized below in Table 4-4. Details of the findings are included in subsequent discussions.

Table 4-4
Summary of Evaluation Findings

Category	Findings	
Effect on Kiln	Spent SCR catalyst does not add beneficial components to the raw mix kiln feed – it does not act as a raw material replacement.	
Operation and Product Quality	In appropriate feed ratios, spent catalyst will not adversely affect kiln operation, emissions, or cement/clinker quality.	
Donofita	The primary benefit of co-processing catalyst will be to solve a waste management problem (i.e. offer an alternative to landfilling).	
Benefits	The process offers a "closed" loop method of recycling where the entire catalyst module is ultimately incorporated into useable products.	
Direct Regulatory  The designation of the waste as hazardous vs. non-hazardous will not greatly to co-process the waste.		
Issues	Additional permitting requirements are not necessary to include spent SCR catalyst as a co-processed waste, at least from the standpoint of the co-processor.	
	Processing of the entire catalyst module is most attractive from an economic standpoint.	
Economics	A "tipping fee" would be required to offset processing costs, typically on the order of \$200-\$250/ton, but exact costs must be determined on a case-by case basis.	

### Process Scenario

The co-processor determined an overall process scenario which would be applicable to most SCR catalyst "batches" considered for processing. Figure 4-5 shows the general steps in the process scenario. Initially, a catalyst sample would be sent to the co-processor for chemical composition evaluation. This would provide needed information in terms of primary oxides and trace elements present. This is especially important in determining emissions impact. Additional information provided to the co-processor during the preliminary evaluation would be related to general project scope, such as number of modules, module weight, location of the catalyst, and bulk metal to ceramic proportion of the modules as a whole.

With the above information, the co-processor would then make their evaluation and determine if the spent catalyst can be accepted, and what the costs would be. Commercial terms would be negotiated and the project would be approved by both parties. Necessary permits and regulatory approvals, if required, would be obtained at this stage. Actual transport of the catalyst would then take place. Note that the co-processor utilized in the case-study provides "turn-key" services, thus transportation arrangements, etc., could be provided by the co-processor as needed.

Under the currently envisioned process scenario, the co-processor would accept entire catalyst modules. As part of their recycle service, they would remove the bulk metals (including screens on plate-type catalysts) as a first processing step (pre-processing). The recovered metals value would help to offset processing costs (this would be considered in the price quote determined by

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the co-processor). This bulk metal recovery would be performed in conjunction with the co-processor's metal recycle partner at adjoining facilities to the actual cement kiln operation. Note that the specific kiln identified in the case study as the target facility for processing does not currently accept solid hazardous wastes, nor does the associated pre-processing facility. This does not preclude the treatment of catalysts deemed hazardous, but this designation would require that an alternate facility be used, or that permitting changes be made at the identified facility.

After the ceramic portion of the catalyst is separated from the bulk metals, any grinding/milling of the catalyst that is required will take place. At this stage, the catalyst is ready for incorporation into the raw mix feed to the mill (or separate feed, if required). As discussed previously, the catalyst becomes incorporated into the clinker product, as it is processed through the kiln. The clinker is then finely milled, and blended if needed, to produce a final cement product. Additives may be incorporated into the milled clinker depending on its properties and the desired characteristics of the final cement product.

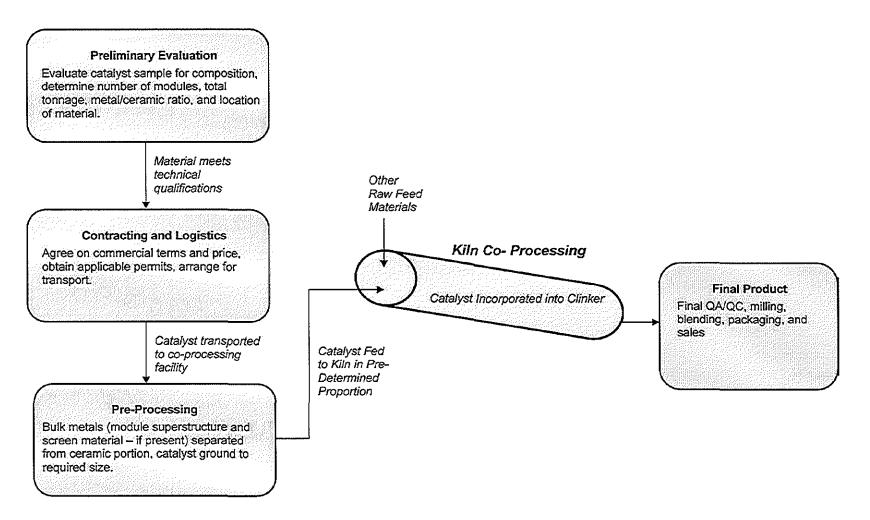


Figure 4-5
Process Scenario for the Co-Processing of SCR Catalyst

# Effect on Kiln Operation and Product Quality

When co-processing wastes, the paramount consideration is the effect that the waste will have on cement kiln operation and product quality. These effects are well understood for frequently processed wastes, such as those discussed previously. However, as is the case with waste SCR catalyst, unusual or infrequently processed wastes must be evaluated carefully to predict any adverse consequences that may occur. This is typically done by an evaluation of the characteristics of the waste in light of past experience and knowledge of how the various waste constituents affect kiln operation and product quality. In the case of SCR catalyst, no BTU value can be derived from the material, thus the focus of the analysis is how the elemental composition of the catalyst will affect the cement clinker product, and how emissions may be adversely affected due to the catalyst contaminants.

The principal components of kiln raw mix feed that provide beneficial cementitious properties to the product clinker include calcium, silicon, aluminum, iron, and sulfur. Given that these constituents are relatively minor in spent SCR catalyst, it is apparent that the catalyst does not provide enough of these materials to significantly offset the amount of raw mix feed needed for the kiln. As a result, there is no benefit in co-processing spent catalyst from a feed material standpoint. A companion analysis is to evaluate whether the spent catalyst components are detrimental to the clinker product. The evaluation showed that since the principal catalyst component is titania, and since the catalyst would be fed at a relatively low rate compared to other kiln feed materials, the presence of the catalyst components would act essentially as inerts in the clinker product and would therefore not adversely affect product quality. It is important to note that the potential for adverse consequences of co-processing catalyst must be mitigated on a case-by-case basis with consideration given to the global feed composition to the kiln, the kiln operating parameters, the characteristics of the spent catalyst, the amount of catalyst to be processed, and the rate at which catalyst is fed to the kiln. Thus, kiln operators will depend on their experience to set co-processing parameters which do not adversely affect kiln operation and product quality.

In terms of the potential for adverse effects associated with emissions, a similar analysis to that above must be conducted, based on past experience and catalyst characteristics. The behavior of various feed constituents, such as heavy metals and organics, within the overall cement manufacturing process, is relatively well known. Using this knowledge and an understanding of the catalyst characteristics, appropriate kiln operating parameters and catalyst feed rates can be selected which do not result in increased kiln emissions. Emission control is generally aided by the inherent native trace metal capture capability of cement kilns in general. Thus, the principal metal contaminants of concern in catalyst, such as arsenic and selenium, are not generally problematic in terms of emissions. Again, the overall emissions effects will be predicted and mitigated by evaluating the global feed characteristics and catalyst feed proportion to the kiln.

### Catalyst Co-Processing Capacity and Feed Rates

The co-processing capacity for any particular kiln will depend both on the kiln's size/production capacity, and the rate at which the spent catalyst can be fed to the kiln (proportion of catalyst to other raw mix feed material). A large kiln, consistent with this case study, will require a raw mix feed quantity on the order of 1,500,000 tons/year. The maximum rate at which catalyst can be fed will depend on such factors as catalyst composition, and the composition of other feed

materials, but it is reasonable to assume that feed rates as high as 1% would be generally applicable. Based on this assumption, a large kiln could process as much as 15,000 tons/year of catalyst. Comparing this value to the expected industry-wide spent catalyst generation rates, as previously shown in Figure 1-2, it is apparent that there is sufficient industry-wide kiln capacity to theoretically process the utility industry's spent catalyst. Although, this is a rough calculation, it is helpful in establishing an order-of-magnitude capacity for cement kilns in general, as compared to the predicted spent catalyst generation rate. For the moderately sized batch of catalyst used in this case study (248 tons total module weight/150 tons ceramic), the required processing time for a large kiln (1,500,000 tons feed/year) would be on the order of 90 hrs at a catalyst feed rate of 1%, and roughly 48 hours for a catalyst feed rate of 2%. This appears to be a very reasonable process time duration.

## Benefits of Catalyst Co-Processing

Cement kiln co-processing effectively offers an alternative route to disposal by landfilling, potentially mitigating some liability concerns, as well as improving environmental good-will by "closing the loop," since the material is ultimately incorporated into a useable product. (Note that potential economic benefits will be discussed in a subsequent section.) Environmental liability, as well as environmental good-will is notoriously difficult to quantify and is case-specific, so the value of these factors cannot be determined in a general manner with any degree of confidence. For regions where landfill disposal is difficult to permit, cement kiln co-processing can offer a vital alternative route to landfilling.

Overall, the process offers a closed loop "cradle-to-grave" concept of catalyst recycle whereby no distinct waste stream requiring landfill disposal is created. This offers an environmentally attractive alternative to landfill disposal of spent catalysts, potentially offering economic benefits (as discussed below), reduction in environmental liability, and an improvement in public perception.

### **Direct Regulatory Issues**

This subject area is related to various topics such as permitting and regulations that are currently in place governing cement kiln co-processing, waste transport, and specific waste disposal and recycle rules governing utilities.

The co-processor determined that their current operating permits and regulatory requirements would not be impacted by the co-processing of spent catalyst. Thus, no direct permitting or regulatory clarifications would be needed to proceed with commercial co-processing of the catalyst, at least in their particular circumstances. However, as mentioned previously, the co-processing facility identified for this case study is not capable of accepting hazardous solid wastes. Thus if the catalyst were deemed hazardous, then an alternate facility would have to be utilized, barring any permit changes.

<sup>&</sup>lt;sup>16</sup> Note that the cement manufacturer used in the study case stated that a maximum non-BTU solid waste processing rate would probably be limited to 10,000 tons/year for the identified target processing facility.

From a transport standpoint, under most cases the governing regulations would be virtually identical to those already in place for the transport of spent catalyst to a landfill. Thus, there may be no transportation-related differences between co-processing and landfilling, other than potentially transport distance. However, depending on the specific nature of the case, as well as the governing local, state, and federal regulations, the transport to the co-processor may be deemed transport for recycle purposes, while transport to a landfill would be deemed transport for disposal purposes. Certain permitting and regulatory differences between these two scenarios may be present and would need to be addressed on a case-by-case basis. The waste designation (hazardous vs. non-hazardous) would of course impact transport and handling, and the associated permitting requirements. Previous EPRI work examined this topic in some detail<sup>17</sup> and the reader is urged to consult the previous EPRI effort.

### **Economics**

Detailed economics of co-processing must be evaluated on a case-by-case basis, thus no global economic analysis can adequately predict the cost of co-processing compared to other options such as landfilling for any particular project. The actual costs for any specific project will be a function of many parameters including the following.

- Catalyst characteristics
- Bulk metal to ceramic ratio
- Amount of catalyst to be processed
- Location of material
- Availability and location of co-processing facilities
- Transportation costs
- Applicable regulatory and permitting requirements

Even though actual economics will be highly case-specific, some general economic guidelines have been developed to give a sense of the cost factors that are involved, as well as to give a rough order of magnitude estimate of costs. These estimates have been developed primarily as a comparison to the alternative of landfilling. The above referenced EPRI report provided a detailed analysis of potential landfill disposal costs, and updated versions of these costs will be used in the current evaluation. Table 4-5 shows the basic analysis assumptions, consistent with the case-study assumptions, already given.

<sup>&</sup>lt;sup>17</sup> See previous EPRI report entitled "Selective Catalytic Reduction (SCR) Catalyst Recycle, Re-Use, and Disposal Options," Product ID: 1017554, 12/16/09.

<sup>&</sup>lt;sup>18</sup> The non-hazardous landfill data are based on state-by-state average costs. Thus, certain individual landfill costs may lie outside of the minimum and maximum values given in the table.

Table 4-5 Economic Analysis Assumptions

Parameter	Value	
Tonnage in catalyst batch (total weight of modules)	248 tons	
Bulk metal portion of batch	98 tons	
Ceramic portion of batch	150 tons	
Average distance to landfill/co- processor	300 miles	
Truck load capacity	20 tons	
Loaded per mile transportation cost per truck	\$4-7 hazardous \$1-2 non-hazardous	

The economic analysis results are shown in Table 4-6, based upon the spent catalyst being treated as a hazardous or non-hazardous waste. For landfill disposal, this distinction is a governing factor, controlling to a large degree the actual landfill tipping fee. For co-processing, this distinction may not be an overriding factor. Expected low, high, and median values for the various parameters are also given, based upon the bulk of the information available. (Note that the data should be taken as a guideline only, especially for hazardous co-processing costs, as these costs may vary significantly from project to project.) It is clear that in most cases, the landfill or co-processor fee will represent the bulk of the overall costs (with the exception of low-cost non-hazardous landfill disposal). It also appears from the available data, that landfill tipping fees have the greatest potential variability of the parameters evaluated. Overall variability is limited somewhat for the co-processing option, since the range of co-processor fees is expected to be much less broad.

Transportation costs on a per-mile basis are comparable for both options, but a differential may occur on specific projects due to their being a difference in distance for the landfill facility as compared to the co-processor facility. Whether or not this distance difference has a significant impact on the overall economics will be dependent on the project costs as a whole. Taxes and generator fees have not been applied to the co-processing option, since in this recycle scenario, these types of fees are generally less applicable.

From a direct economic standpoint (without consideration given to a dollar value of liability limitation and environmental good-will), it appears that co-processing would not be directly competitive with landfill disposal for non-hazardous designated spent catalyst (with the possible exception of unusually high-cost individual landfill scenarios). However, for high-cost non-hazardous disposal, co-processing is roughly on par with landfilling, especially if some consideration is given to liability and good-will factors.

In terms of disposal with a hazardous waste designation, co-processing becomes much more attractive. In fact, co-processing appears to be competitive for most hazardous waste scenarios, except for very low-cost hazardous waste disposal. Considering the additional liability and good-will concerns associated with hazardous waste disposal, co-processing offers added relative

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benefits. Thus, co-processing appears to be highly attractive under scenarios where the spent catalyst is treated as a hazardous waste.

Again, it is very important to note that the analysis is highly generalized in nature. Specific projects must be treated on a case-by-case basis, with consideration given not only to direct costs, but to potential environmental impacts and public perception. It is also important to note that co-processing costs, in particular, are market driven. Thus, fees may be negotiated as a function of catalyst batch size, frequency of co-processing, and company-wide volume. Therefore, it is important not to exclude any particular disposal/recycle option based solely upon the analyses present here.

Table 4-6 Co-Processing versus Landfill Disposal Economics Analysis

	Landfill Disposal			Cement Kiln Co-Processing		
Parameter –	Low	High	Approximate Median Value	Low	High	Approximate Median Value
		Non-Hazaı	rdous (per ton basis)			
Landfill or Co-Processor Fee	\$14	\$100	\$32	\$200	\$250	\$225
Transportation Costs	\$12	\$25	\$18	\$12	\$25	\$18
Taxes and Generator Fees	\$2	\$20	\$5	NA	NA	NA
Total Cost - Non-Hazardous	\$28	\$145	\$55	\$212	\$217	\$243
		Hazardo	ous (per ton basis)			_
Landfill or Co-Processor Fee	\$50	\$800	\$300	\$250	\$300	\$275
Transportation Costs	\$50	\$90	\$70	\$50	\$90	\$70
Taxes and Generator Fees	\$1	\$105	\$20	NA	NA	NA
Total Cost - Hazardous	\$101	\$995	\$390	\$300	\$390	\$345

# **Use of Ceramic Material with Chemical Processing**

Through the use of chemical processing, it is possible to recover some of the metal species contained in the ceramic matrix of spent SCR catalyst. This metal recovery should not be confused with the bulk recovery of metals, such as the module superstructure and catalyst plate screens. The matrix of the ceramic is by nature quite stable, and the metallic species are present as the oxides. Aggressive chemical processing is therefore necessary to recover the metals with high efficiency. At first glance, one might assume that the high titania content of the catalysts would represent a potentially valuable source of titanium metal. However, this is not the case. The value of titanium metal lies not in the presence of titanium specifically, but in the fact that it is in metallic form. Titanium in mineral form is quite ubiquitous in the environment (titanium is in fact the ninth most abundant element in the earth's crust, making up about 0.6%). The issue is that titanium is found naturally in the oxide or other compound form, requiring costly processing to produce titanium metal. Thus, the value of any titanium source is strongly a function of the form in which titanium is present. The oxides of other metals such as vanadium, molybdenum, and tungsten may be more valuable due to their relative scarcity in the environment, as well as the relative ease at which the oxides can be converted to the metals.

Historically, metal recovery has been practiced for catalysts types such as precious metal catalysts (usually platinum-group metals supported on aluminas or zeolites), and sometimes for nickel and cobalt catalysts. To explore the feasibility of metal recovery from spent SCR catalyst, EPRI contracted with a specialty catalyst recycling firm to perform a first-phase laboratory study. The results of this work follow.

# Metals Recovery Feasibility Study<sup>11</sup>

## Background

EPRI contracted with LEMetrix Solutions, LLC<sup>12</sup> to perform a small-scale study to evaluate the technical and economic feasibility of recovering metals from the ceramic portion of SCR catalyst. For this study, two honeycomb logs of catalyst were utilized, one sourced by EPRI and one sourced by LEMetrix. These samples were exposed in large utility boilers firing eastern bituminous fuels. These catalyst samples are considered roughly representative of spent SCR catalyst, associated with eastern fuels. Both samples were similar in chemical composition and contained roughly 4.5% W and 1% V with no molybdenum.

### Thermodynamic Calculations

A thermodynamic study was conducted using FactSage to determine the equilibrium species after roasting. TiO<sub>2</sub>, WO<sub>3</sub>, Na<sub>2</sub>CO<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>, As<sub>4</sub>O<sub>6</sub>, S, CaO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, and Fe<sub>2</sub>O<sub>3</sub> were input as reactants to the thermodynamic model which then predicted the product species. A reaction temperature of 800°C was selected.

<sup>&</sup>lt;sup>11</sup> Much of the following discussion is excerpted directly from information and data provided by LEMetrix.

<sup>&</sup>lt;sup>12</sup> LEMetrix Solutions, LLC - Plant, 110601 Twitty Drive, Rolla, MO 65401, Tel: 573-426-6449.

The model results predicted that sodium would react with tungsten and vanadium to form their sodium salts. The order of thermodynamic stability of the sodium compounds would be: sodium sulfate, sodium aluminosilicate, sodium tungstate, sodium vanadate, followed lastly by sodium titanate. Iron would be converted to hematite which would not be soluble in the leach solution. Arsenic would react with calcium to form calcium arsenate. It is unknown whether calcium arsenate or sodium titanate would be soluble in the leach solution. Note that if calcium is present in the catalyst in amounts greater than that which can react with arsenic to form the more stable calcium arsenate it could form insoluble calcium tungstate and calcium molybdate--reducing leach recoveries for tungsten and molybdenum. This may in fact be the case for catalysts associated with the firing of PRB fuels. Since it would be ill-conceived to add arsenic to the roast to bind up calcium in order to improve tungsten and molybdenum leach recoveries, it is possible that phosphorus (similar to arsenic in chemical properties) could be added instead.

### Laboratory Results

### Analytical Procedures - Salt Roast and Water Leach

The SCR samples were first ground, and then roasted at 800°C for 2 hours with stoichiometric amounts of sodium carbonate to convert both vanadium and tungsten into their soluble sodium salts. The soluble sodium compounds were then leached with water for 1 hour and filtered after which the solutions and tails were assayed for vanadium and tungsten to determine the recoveries of these two elements. Initial assays of the materials, as well as the leach pregnant (preg) solution and leach residue from the first sodium roast were performed both at LEMetrix and at QChem Laboratories for comparison. LEMetrix used a sodium fusion, boil, and filter process on solid samples, followed by analysis of the solution by atomic absorption. Solutions were assayed "as is" by atomic absorption. OChem used an ICP which is not influenced by interferences like the flame AA. It was found that the solution assays from both labs were within 5% of each other. The solid assays using the fusion process, however, were about 25% higher than the solid assays using ICP. The most likely cause of the AA Flame assay discrepancy is potassium interference. Further testing will determine if the samples can be matrix matched to minimize interferences. This testing is important in order to minimize the costs of outside analytical. Recovery results for the EPRI-sourced sample are shown in Table 4-3 below. Note that a calcium analysis was not performed on this sample so it is possible that if calcium was present the leach recoveries could be improved with the addition of sodium phosphate in the roast, Future testing will investigate this possibility. In any event, considering the low tungsten and vanadium feed concentrations, the recoveries were very respectable.

Table 4-3
Metal Recovery Results for SCR Catalyst Sample

Stream	Wt (g)	Assay (%)	Recovery <sup>13</sup> (%)
	Van	adium	
Feed 35.15 1.49			
Preg	91.00	0.51	73.82
Wash	75.00	0.07	8.85
Tails	35.43	0.31	17.33
	Tun	gsten	
Feed	35.15	3.60	
Preg	91.00	91.00 1.66 7	
Wash	75.00	0.28	10.23
Tails	35.43	0.90	15.64

### Ion Exchange Resin Testing with DOWEX 21K XLT

The preg solutions from the above processing were used to determine if a tungsten and vanadium separation could be performed using a column containing Dowex 21K XLT. For this work, resin containing approximately 16 milliequivalents capacity was loaded into a glass cylinder. Preg solution was dripped through the resin column and the effluent measured and assayed. Figure 4-2 is a plot showing the loading of the column. The amount of tungsten and vanadium loaded is expressed in terms of milliequivalents (Meq). Both tungsten and vanadium were found to initially load onto the resin. However, as the resin approached its maximum capacity successive additions of preg solution caused tungsten to desorb in preference for vanadium. The preference of the resin for vanadium over tungsten does not appear to be high enough to use the Dowex 21K XLT to absorb vanadium from high concentrations of tungsten.

<sup>&</sup>lt;sup>13</sup> Recovery values are calculated as the fraction of material found in the various streams compared to the material in the sum of the streams. These values differ from a comparison to the feed, due to differences in the analytical accuracies on the raw solid material.

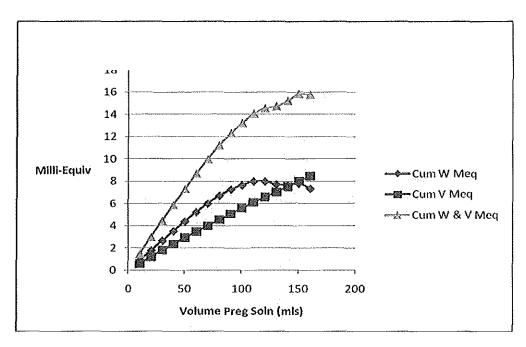


Figure 4-2
Dowex 21K XLT Loading Curve

A saturated sodium chloride solution was used to strip the loaded resin. Figure 4-3, below, shows the elution graph. It appears that while effective in removing tungsten without vanadium, it left a considerable amount of tungsten on the resin. Future test work will try and improve these results. Different solvating ions (ammonia or chloride anions instead of hydroxides which were present in this case) may improve the separation selectively of the resin.

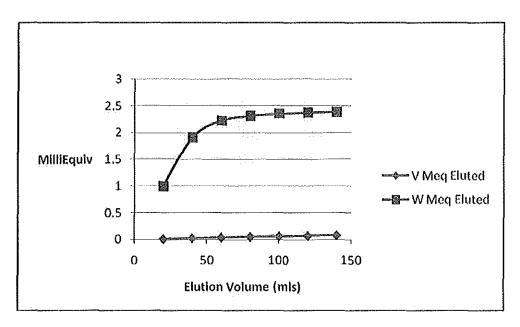


Figure 4-3
Dowex 21K XLT Elution Curve

# **Economic Analysis**

An economic analysis was developed based upon analyses originally developed by LEMetrix. This analysis uses a basis of 500 tons of catalyst and is based upon information developed from the above described testing. Table 4-4 shows the basic assumption utilized in the analysis, and Table 4-5 shows important calculated quantities and resulting dollar values. This analysis assumes the recovery of bulk metals, vanadium, and tungsten. As discussed below, the fate of the titania will likely be an important driver in the overall economics.

Table 4-4
Catalyst Recycle – Assumptions for Economic Analysis

Parameter	Value	
Analysis Basis – Amount of Catalyst	500 tons of catalyst (1,000,000 lbs)	
Module Weight	1 ton/ module	
Number of Modules	500	
Catalyst Type	Honeycomb	
Proportion of Bulk Steel in Module (by wt.)	33%	
Proportion of Ceramic Catalyst in Module (by wt.)	67%	
Vanadium Content	1 %	
Tungsten Content	4.5 %	
Titanium Content	36%	
Carbon Steel Recovery Rate	100%	
Vanadium Recovery Rate	80%	
Tungsten Recovery Rate	80%	
Vanadium Sales Price (as V2O5, 85% of market)	\$12.75/lb	
Tungsten Sales Price (APT powder, 85% of market)	\$12.13/lb	
Scrap #1 Heavy Melt Carbon Steel Price	\$250/ton	
Current Estimated Processing Cost	\$800/ton	

Table 4-5 Catalyst Recycle – Economic Analysis

Parameter	lbs	tons
Total Weight of Spent Catalyst Modules	1,000,000	500
Ceramic Catalyst Portion	670,000	335
Carbon Steel Portion	330,000	165
Total Available Tungsten	30,150	15.1
Total Available Vanadium	6,700	3.4
Total Available Titanium (as metal)	241,200	121
Total Available Titanium (as oxide, TiO₂)	402,000	201
Recovered A36/A569 Carbon Steel (scrap)	330,000	165
Recovered Tungsten	24,120	12.1
Recovered Vanadium 5,360		2.7
Carbon Steel Sales	\$41,250	
Tungsten Sales	\$292,580	
Vanadium Sales	\$68,340	
Titanium Sales		
Total Recovered Materials Sales	\$402,170	
Processing Cost	\$400,000	
Gross Profit (total for 500 tons catalyst)	\$2,170	

The above economic analysis is very approximate at this time, but it does show that the recycle of the ceramic portion of the catalyst for metals recovery is potentially feasible. As presented, the analysis shows essentially break-even with the assumed metal recoveries, metal values, and processing costs. Tungsten sales represent the biggest source of revenue, followed by vanadium sales, and bulk metal (scrap) sales.

It is clear from the analysis that the recycle economics will be governed by several primary parameters: processing cost, metals content, metal recovery rates, and metal values. As these parameters vary, the economic attractiveness of recycling will change accordingly. Looking at the tungsten content in particlar, one can see that for the above example, an increase in catalyst tungsten content of just 1% (from 4.5 to 5.5%, for instance) increases revenue in the example case by roughly \$65,000. An improvement in processing cost of 10%, increases revenue by \$40,000. Thus, the overall economics are quite sensitive to a number of parameters. Catalyst would likely need to be evaluated on a case-by-case basis to determine the feasibility of recycling. In addition, process optimization to lower processing costs will necessarily be an important part of the overall economics.

One major consideration is the fate of the titania portion of the catalyst. As previously disucssed, titania makes up a major part of the ceramic portion of the catalyst. Finding a use for this material (and avoiding disposal costs) would be a huge benefit to the overall recycling process. The above economic analysis assumed no value for this material, but a disposal costs was not applied either. Thus, the final disposition of the titania will have a major impact on overall economics. At a minimum, a low-value use for the titania would allow disposal costs to be avoided and would be environementally attractive, since virutally 100% of the catalyst would be recycled in this case. Thus finding a use for the remaining titania material is a high priority.

## Future Testing for Catalyst Recycling

Additional work is required at both the Lab Scale and Pilot Scale to further develop the recycling processes and to fully assess the feasibility and economics. Areas of particular interest include:

- Refinement of the roasting step to improve metal recoveries.
- Potential utilization of sodium phosphate to ameliorate depression of tungsten recoveries by calcium.
- Finding a suitable industrial use for the leach residues (containing mostly titania).
- Optimization of the separation of vanadium, molybdenum, and tungsten via anion exchange resin.
- Investigation of methods for the purification of solutions (phosphorus removal, etc.) and precipitation techniques.

# Metal Recovery Results Summary

Overall, the preliminary results of the metal recovery recycle testing are very promising, achieving 70-85% metal recoveries into the preg solution. Ion exchange testing for metals separation also showed promising results, however, much more testing is needed to determine a viable detailed recovery process. Rough economic analyses showed that the recycle process has the potential to be feasible and warrants additional study. Under the current rough economic analysis, recycle appears to be break-even. Improvements in processing cost and by-product utilization (titania) will improve the overall economic attractiveness. Ultimately, the recoverable metal content of the catalyst will have a major impact on the recycle economics; thus, the cost/benefit of recycle will need to be determined on a case-by-case basis as a function of the particular catalyst design.

### Re-Use of Catalyst in Alternate Applications or for New Catalyst Manufacture

One catalyst re-use possibility is to utilize catalyst removed from one installation in an alternate installation. This option is typically most often applied to fairly young catalysts with high relative activity for which their specifications do not continue to match the intended application. For instance, a fuel change may render an installed catalyst formulation inapplicable for an installation. Another driver for this type of catalyst re-use may be the need to lower  $SO_2$  conversion (due to  $SO_3$  problems, fuel changes, operating condition changes, etc.). If the remaining activity is high, this catalyst can be utilized in another installation. This may be done within the original owner's system of plants, or the catalyst may be sold to an alternate utility. Although catalyst re-use in this way is an attractive scenario, the opportunities to utilize this option are quite rare.

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Another re-use option is to utilize spent catalyst in the manufacture of new catalyst. This option has been investigated in some detail in previous EPRI reports, with the conclusion that the volume of catalyst that can be utilized in this way is not significant, and the method does not have widespread applicability. Current industry information does not indicate that these findings have changed.

# 5 ON-SITE CATALYST WASHING

## Background

The washing of catalyst on-site is an area of particular interest to EPRI members. Previous EPRI studies have examined catalyst regeneration and rejuvenation, primarily off-site (although on-site rejuvenation is potentially an option), but these studies did not address in detail on-site washing. A previous EPRI report discussed the general process of catalyst washing, as well as gave references as to specific technology firms experienced in catalyst washing. <sup>14</sup> This report also gave some information related to the determination of whether a specific batch of spent catalyst would be a candidate for washing.

The identification of a specific process as "washing" or "rejuvenation" is somewhat of a grey area, but in this study washing is defined as wet treatment of catalyst, primarily for fouling, where no aggressive chemical solutions/agents are used to strip chemically bound poisons from the catalyst, and no active components are added via these chemical solutions. (Note that some removal of chemical poisons may occur as a matter of course during washing, but this is not the primary targeted purpose of the washing process.) Thus, washing is generally considered to be less technically demanding than rejuvenation or regeneration, certainly in terms of the chemistry involved. However, the washing procedures may be quite sophisticated in terms of mechanical processing, the wash solutions that are utilized, and the drying procedures, etc. As a consequence, washing processes may vary greatly in their level of sophistication, from carefully designed proprietary treatment utilizing specialized equipment with highly controlled wash solutions (high-tech processes), to very simple hose-down or "dunk" procedures using basic plant equipment (low-tech processes).

The current work with catalyst washing is divided into two primary areas of effort: 1) a review of the existing industry experience and available data and 2) a detailed "case study" where an actual field washing effort is followed closely by EPRI. In reference to the latter area of effort, no onsite washing project was identified which could be followed by EPRI to be included in the current reporting effort. As a result, a follow-on technical update will be issued which details an on-site washing project which has been identified and will take place in the spring of 2009. This identified project will be a simple wash utilizing on-site plant contractors with no specialized equipment or processing.

<sup>&</sup>lt;sup>14</sup> See the prior EPRI report entitled "Catalyst Disposal, Recycle, and On-Site Washing/Rejuvenation Options," EPRI Report 1012657, February 2007.

## **General Washing Process**

The specifics of any washing process will necessarily be highly case-specific. However, in a very general sense, washing follows a step-wise process. This generalized process is shown in Figure 5-1 to assist in the understanding of the industry experience as described below. Note that one or more of these steps may be omitted based upon the specific case. The following paragraphs briefly discuss the primary steps involved in a catalyst washing project.

Initial Evaluation – Catalyst must be evaluated initially to determine if it is a candidate for washing. Catalysts that are relatively young and have experienced loss in functionality due to physical fouling mechanisms are usually considered good candidates for washing. Catalysts which are highly aged and have experienced long-term chemical deactivation would be expected to respond less favorably, and may not be candidates. Economics and logistics will play a major role in the decision to wash catalyst.

**Process Optimization** – The washing process may be optimized by using catalyst samples to determine the most effective washing parameters, such as soak time, solution composition, required agitation, and drying methods. Laboratory testing is used as an aid in determining the effects on the catalyst due to different washing parameters.

Dry Cleaning – In almost all cases, the exposed catalyst is cleaned via dry vacuuming, agitation, etc., prior to the actual wet processing. In the case of plate and hybrid catalysts, the modules may be disassembled during this stage of processing to facilitate dry cleaning and future wet processing.

Wet Processing – The actual wet processing of the catalyst may involve several stages, such as soaking, agitation, deluge, and rinsing. The treatment of the catalyst, especially in terms of the physical handling, may be refined during actual processing to minimize the effort and maximize the effectiveness.

**Drying** – A final drying stage may be conducted using heated forced-air drying, or the catalyst may simply be allowed to dry naturally. In any event, the moisture level of the catalyst would be required to be reduced prior to heating in the reactor.

Effectiveness Evaluation — A final evaluation of the effectiveness of the washing process would typically be conducted after the treatment of the catalyst. This evaluation would usually involve laboratory analyses on samples to determine the activity and SO<sub>2</sub> conversion, and other parameters such as porosity, surface area, chemical composition, and strength. A physical inspection will reveal the effectiveness in terms of the removal of macro-fouling.

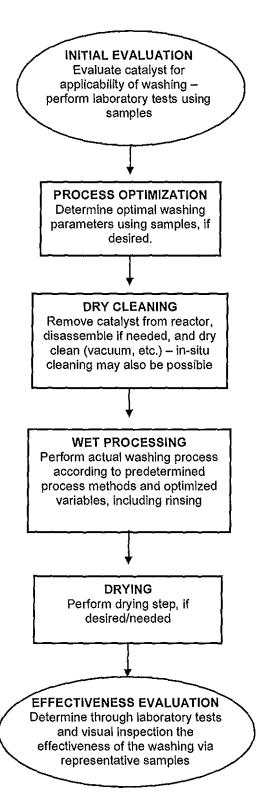


Figure 5-1
General Process Flow Diagram for Catalyst Washing

## Industry Experience

As stated, the current reported information focuses on industry data currently available and is presented in the form of three case studies reflecting full-scale washing projects. Note that this information is based upon industry data and has not been independently validated by EPRI. Results from Cases #1 and 2 were obtained from the host Utilities, while Case #3 was obtained from the vendor performing the services.

All of the following cases involve the removal of the catalyst from the reactor for on-site ex-situ washing. It should be noted however, that in-situ washing is a possibility and may be considered based upon logistical and technical considerations.

### Catalyst Washing - Case #1

## Background

The first case study involves two SCRs located on twin units. These units had large T-fired boilers burning eastern bituminous coal. Major plugging of the first layers of both SCRs was experienced due to LPA ash, and ultimately it was determined that the first layer of catalyst would be removed from the reactors for on-site washing. The utility contracted with Enerfab<sup>15</sup> to provide catalyst washing/cleaning services. Given the specialized physical processing utilized, along with optimized process parameters, this particular washing case would be considered a relatively high-tech washing process compared to more simple non-optimized water-wash techniques. The catalyst was of honeycomb type and had been in service for only a short period of time. Thus, very little deactivation due to arsenic poisoning would be expected. Given that the underlying activity of the catalyst was still quite high, this represented an excellent case for on-site catalyst washing. Note that these units were operated in the ozone season only, at the time. Thus, the catalyst washing activities were undertaken during the non-ozone season.

# Technology Description

### Laboratory Pretesting

As a preliminary step to the implementation of the technology, laboratory tests were performed to help optimize some of the washing parameters for the particular catalyst being treated. These tests were performed utilizing representative samples. In particular, the technology offered by Enerfab includes proprietary wash solutions containing various additives. The results of some of this additive testing are shown in Figure 5-2 which shows the effect of three different washing solutions on the catalyst open channels after processing. Note that the catalyst had only 35% open channels prior to processing, which would result in significant pressure losses, and a severe reduction in the apparent catalyst activity (i.e., reactor potential). Significant improvement in catalyst open channels could be realized by the selection of the optimum wash solution.

Figure 5-3 shows the effect of washing duration on the catalyst open channels. These data clearly show that there is an optimum washing duration. It should be noted that the duration options are randomly presented, thus "Option C" should not necessarily be construed as being of longer

Enerfab, Inc., Clean Air Technologies Group, 4955 Spring Grove Ave, Cincinnati, OH 45232. Telephone: 513 / 641-0500

duration than the optimal option, "Option B." (Also note that the catalyst had only 31% open channels, slightly lower than that shown in the previous figure. This difference is due to the difference in the actual open channels present for the sample being utilized in the laboratory testing.)

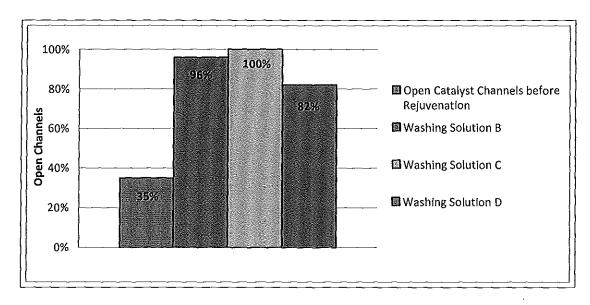


Figure 5-2 Effect of Various Washing Solutions on Open Channels

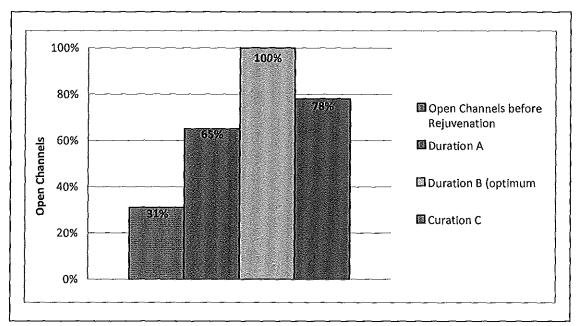


Figure 5-3
Effect of Washing Duration on Open Channels

# Full-Scale Implementation

Full-scale processing was conducted utilizing the optimized process parameters as determined from the laboratory testing. Enerfab utilizes an "oscillation" process, which consists of multiple stages. The first stage begins with mechanical cleaning, which removes the loose fly ash and LPA ash present on the catalyst face. This allows for a closer inspection of the actual channel plugging. This removal of bulk material also aids in minimizing the washing solution volume and chemicals required. This cleaning stage is shown in Figure 5-4 where the heavily fouling and LPA can be seen.

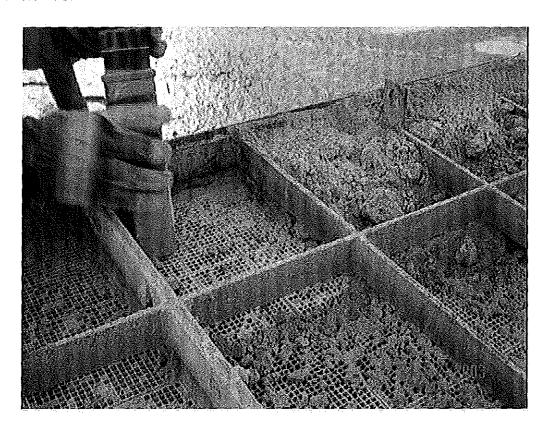


Figure 5-4
Photograph of Catalyst Vacuuming to Remove Bulk Fouling Material

The second stage of processing involves the oscillation washing step. In this stage, the modules are fixed in a cage and slowly agitated in a basin filled with the washing solution. This processing step removes fly ash that is packed in the catalyst channels. During this stage, some chemisorbed compounds may be removed. (For true catalyst rejuvenation, the removal of chemisorbed compounds, such as arsenic, will be a focus of the processing, whereas in washing processes this removal is somewhat of a side effect.) Figure 5-5 shows the catalyst oscillation being conducted with a single module in a process vat.

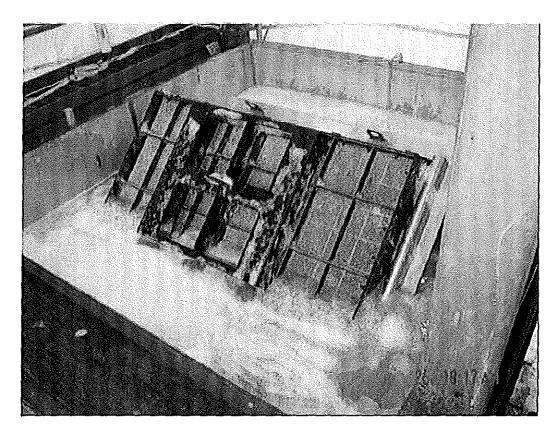


Figure 5-5
Catalyst Module Oscillation Processing

The next process step involves the further removal of ash deposits using a combination of water and air flow through the channels of the catalyst. This mechanical action is highly effective at removing LPA ash wedged in the catalyst channels, as well as other ash deposits deep within the catalyst. In this step, air is injected in the process vat from below the catalyst module, causing an upward flow of cleaning solution and air. This "aeration" step is depicted in Figure 5-6. Note that the catalyst module itself is under the water surface – the steel shown represents the module "cage" used for handling the catalyst during processing.



Figure 5-6 Aeration of Catalyst Module

The final stage of processing involves drying, where hot air is used to reduce the humidity of the catalyst, making it ready for re-installation into the reactor. Figure 5-7 shows the cleaned catalyst.

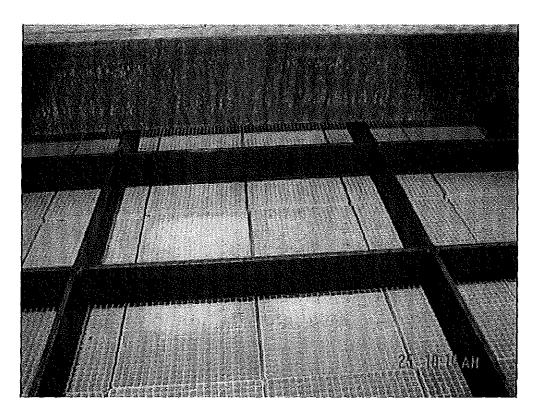


Figure 5-7
Cleaned Catalyst Ready for Reactor Re-Installation

### Technology Effectiveness

The general effectiveness of the technology as implemented for the described example case is best shown by the measurement of the relative activity of the catalyst after treatment. Note that relative activity is a highly applicable measurement because this parameter includes effects from both fouling (associated in this case primarily with channels being plugged) and any effects that may be associated with the intrinsic activity of the catalyst itself, such as vanadium level, dispersion, etc. Thus, relative activity is a macro-parameter, providing the single best measurement for determining catalyst deNOx potential before and after the washing process. Since relative activity includes a component associated with the intrinsic activity of the catalyst, it is also a good indicator to determine if any adverse effects have occurred due to the washing process related to catalyst species removal, or solubilization of catalyst poisons, etc. Note however, that catalyst relative activity will not reveal all performance parameters that may have been affected by the washing process. This includes parameters such as catalyst strength and SO,

conversion – these parameters would need to be measured directly to assess the effects due to washing.<sup>16</sup>

Figure 5-8 shows the relative activity of two samples before and after washing. The plot shows a marked improvement in activity with the cleaned samples, with one sample showing an activity returned to that of new, while another sample showed an activity return of roughly 80% of new. It is important to note that variability between samples is common, and a good assessment of the overall effectiveness will require the analysis of multiple samples, along with visual inspections.

As mentioned previously, one side-effect of the washing is the removal of some of the arsenic present. This arsenic removal is not the primary purpose of the washing, and processing focusing on arsenic removal would theoretically be termed a rejuvenation process. In any event, as shown in Figure 5-9, the washing did produce some reduction in arsenic. The contribution of this arsenic removal to the overall improvement in activity cannot be determined from the available data.

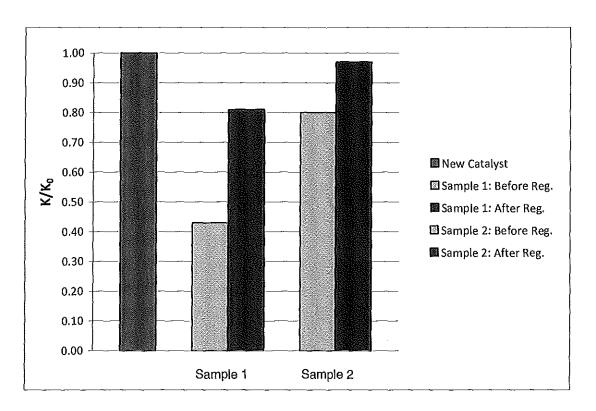


Figure 5-8
Effectiveness of Washing on Relative Activity

<sup>&</sup>lt;sup>16</sup> Note that this is predicated on catalyst being tested which is representative of the catalyst <u>as installed in the reactor</u>. Thus, if LPA is removed for instance, prior to laboratory testing, measurement of relative activity will not provide a representative assessment of activity before and after washing that would include effects from fouling. In this case, when fouling material is removed prior to laboratory testing, the relative activity would be primarily a measure of intrinsic activity only.

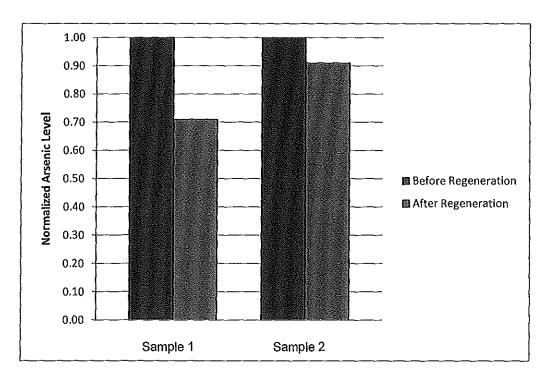


Figure 5-9 Effect of Washing on Arsenic Concentrations

# Catalyst Washing - Case #217

# Background

For washing Case #2, catalyst was washed on-site to remedy a LPA problem. Table 5-1 presents boiler and SCR background information. The host site was a 350 MW Mid-Western utility plant. The boiler was cyclone fired and burned 100% PRB coal.

<sup>&</sup>lt;sup>17</sup> The following discussion contains information that in many cases is excerpted directly from information provided to EPRI from the participating utility.

Table 5-1
Boiler and SCR Background Information

Parameter	Value
Plant	Mid-Western Utility
Boiler Type	Cyclone
Unit Size (nominal)	350 MW
SCR Inlet NOx (nominal)	200 ppm
SCR NOx reduction	90%
Reactor Configuration	2-layers
Fuel Type	100% PRB
SCR Normal Temperature (Full load)	720° F
Washed Layer Position	First layer
Washed Catalyst Type	Honeycomb

## **Process Description**

The washing process utilized for this example case was developed by the host utility while the actual work was performed by a local contractor under the utility's direction. Compared to the previous example, this case would be considered a relatively low-tech process, since no highly specialized proprietary process, equipment, or labor was used. All necessary permits were obtained by the utility to dispose of waste water into the on-site ash pond.

As a preliminary step to the washing process, catalyst modules were vacuumed to remove loose ash. The basic washing process involved an initial soak of the modules in a vat of water for approximately 20 minutes, with a longer soaking duration being used for severely fouled modules. The water utilized was raw lake water, with a typical pH of 6.5-7.0. Thus, there was no adherence to any special water quality specifications. The soaking step was followed by a "dunking" step, where a crane was used to slowly "dunk" the modules approximately 10-20 times to aid in the removal of pluggage. The number of repetitions could be adjusted according to the level of fouling in the module. The utility reported that roughly 8 modules could be treated in a 10-hour shift when utilizing a single processing vat.

After completion of the wet processing, the modules were dried by blowing hot air down through the modules for approximately 24 hours. The washed modules were then stored in a heated warehouse. Note that residual moisture would be removed as the reactor is started up.

### Washing Effectiveness

Catalyst samples were tested before washing. A washed catalyst was tested after one ozone season in service. All tests were performed at the catalyst supplier's laboratory. The evaluation tests utilized are summarized in Table 5-2 below.

Table 5-2 Catalyst Evaluation Tests

Test	Method
Activity	Microscale reactor
Specific surface area	Brunauer-Emmett-Teller (BET) method
Bulk and surface chemical analysis	X-Ray Fluorescence (XRF)
Pore volume	Water saturation method
Pore size distribution	Mercury porosimetry
Abrasion resistance	
Transverse and longitudinal compression	

The critical evaluation of washing effectiveness was done primarily via the determination of relative K-values before washing and one ozone season after washing. Activity test results are summarized Figure 5-10. The unwashed catalyst presented a relative activity of 0.87 after 7,200 hours in service, while the washed catalyst presented a relative activity of 0.84 after one ozone season in service. Given the tolerance of the activity measurement, it would be concluded that washing had no adverse effect on the activity. It is important to note that this activity measurement differs somewhat from the previous case. In this case, it is presumed that the macro-fouling is removed from the catalyst samples prior to testing. Thus, the relative activity measurement assesses the change in intrinsic activity only, and does not make an assessment about the effectiveness of removal of the LPA ash. LPA ash removal was assessed visually, showing roughly 90% open channels, where a much larger portion was fouled originally. Note that blockage was found at all depths within the catalyst channels, not just on the catalyst face. Thus the washing procedure appeared to be effective at removing fouling found deep within the catalyst channels. Consequently, given no loss in intrinsic activity, and a marked improvement in open channels, the catalyst functionality was greatly increased.

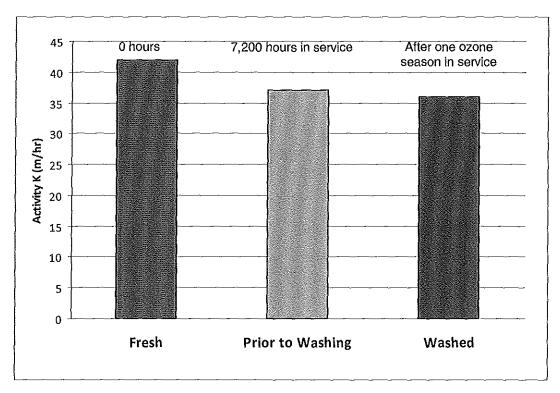


Figure 5-10 Activity Test Results

The results of the physical tests as shown in Table 5-2 indicated that the catalyst experienced no physical or thermal damage. The specific surface area test showed that no significant area loss occurred due to washing. In addition, the pore volume and pore size distribution tests indicated that there was no significant decrease in number of pores or pore structure. The abrasion resistance test and compression strength tests exhibited acceptable values and indicated that the washed catalyst was in good mechanical condition.

The bulk and surface analysis results indicated that the washing process removed calcium masking; however, poisons such as phosphorous and arsenic remained in the catalyst. It should be noted, however, that the overall objective was to unplug the channels and remove ash fouling as opposed to 'rejuvenate' or strip poisons from catalyst surface, so a significant removal of chemisorbed poisons would not be expected.

Overall, the outcome of the catalyst washing process was considered very successful as approximately 90% of the plugged channels were opened, and intrinsic activity was not affected. In addition, the physical integrity of the catalyst appeared not to be jeopardized by the washing process.

#### Estimated Costs and Potential Issues

The utility estimated the cost to wash catalyst at \$600 per module (approximately \$300/m³). This estimate reflects costs that were primarily associated with project planning, labor for catalyst removal and re-installation, labor for actual catalyst washing, permitting, and catalyst testing. It should be noted that this case experience is associated with a cyclone boiler burning PRB fuel

with LPA ash acting as the primary cause for washing. Results from this project may not apply to other boiler types, fuels, and deactivation mechanisms. In addition, results are restricted to honeycomb catalysts – plate or corrugated catalyst types may behave differently. In all cases, an evaluation of the washing process should be conducted on test samples prior to full-scale treatment. The utility performing the described work recommended independent (other than the catalyst supplier) verification of test results, as well as long-term evaluations (including SO<sub>2</sub> to SO<sub>3</sub> conversion) of catalyst performance. The utility noted that wet catalyst must be dried after washing to protect its mechanical integrity, and recommended that drying and calcinations be performed in the SCR by slowly starting up the unit.

# Catalyst Washing - Case #3

The information presented in this Case is based upon vendor data. EPRI has not had the opportunity to independently validate the final catalyst performance.

## Background

Catalyst washing Case #3 involved the washing of catalyst associated with corrugated type catalyst. Two specific cases are reported: 1) treatment of catalyst from four large operating units firing PRB coal and 2) treatment of catalyst from three units firing eastern bituminous fuel. In the case of the PRB-fired units, these units were washed five times over a 20,000 hour operating period. In the case of the eastern bituminous fired units, one unit's catalyst was washed three times over 120,000 operating hours, and two unit's catalyst were washed one time each. Additional foreign and domestic experience not reported here includes biomass and industrial units.

### **Process Description**

In all washing cases, the basic physical processing of the catalyst is similar. Some details of the processing, such as treatment times, may be adjusted according the needs of the specific catalyst being treated. Preliminary bench-scale testing may be warranted to determine optimal treatment parameters, such as the treatment water characteristics. One such example of laboratory testing is shown in Figure 5-11, where different treatment solutions are compared for effectiveness on activity. Note that this is an example case and can not necessarily be applied globally to all washing processes.

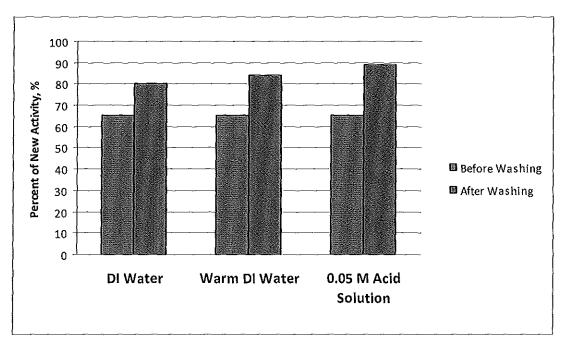


Figure 5-11
Comparison of Wash Solutions on Relative Activity (Example)

The actual treatment of the catalyst involves several steps including: 1) initial dry cleaning, 2) washing, 3) water rinse, and 4) air dry. Each of these steps is discussed below. Note that each of these treatment steps may be modified depending on the need of the catalyst being treated.

## Initial Dry Cleaning

Dry cleaning of the catalyst modules is conducted prior to wet treatment to remove loose bulk deposits of accumulated fine and LPA ash. The most thorough dry cleaning is accomplished by separating the individual catalyst elements/blocks from the module. This allows cleaning to be conducted from both the inlet and outlet of each individual block. Although this separation of the blocks is not absolutely required, it was performed on both the PRB and eastern bituminous cases described here. Dry cleaning may involve vacuuming, vibrating, and air blowing depending on the severity of the fouling and the ease with which the fouling material can be removed. Figure 5-12 shows the vacuuming of an individual catalyst element.



Figure 5-12 Vacuuming of Individual Catalyst Element

### Wet Processing

The actual washing of the catalyst may be conducted in-situ, but both of the cases described here utilized ex-situ processing, where catalyst modules were removed from the reactor and processed in a treatment area. In both cases, the first stage of wet processing involved soaking in a solution of warm demineralized water for a period generally of 15-30 minutes. In the case of the catalyst associated with eastern bituminous coal, air agitation was used to improve the ash removal. After the soaking period, the catalyst was rinsed with clean demineralized water prior to drying. The general recommendations from the catalyst supplier are to use clean potable water or better, to use a 30-min warm water soak, and to monitor the water and exchange frequently.

Figure 5-13 shows a large vat where several catalyst elements are being soaked along with air agitation. Figure 5-14 shows the air agitation in detail. It is clear from these photos that the air agitation provides an energetic washing, which aids in the removal of ash deposits. Figure 5-15 shows several pictures of an individual catalyst element during the treatment process, including prior to washing, during a spray-down wash, during soaking, and after washing. The relative cleanliness of the processed catalyst element is clearly discernable.

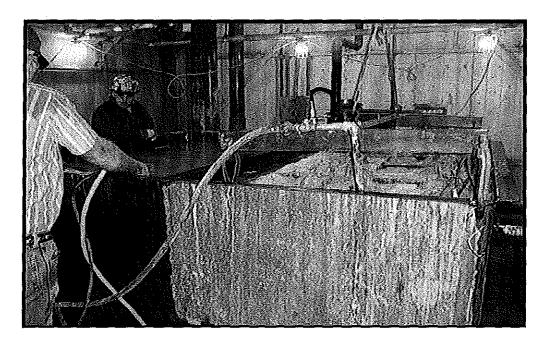


Figure 5-13 Catalyst Elements Being Soaked with Air Agitation

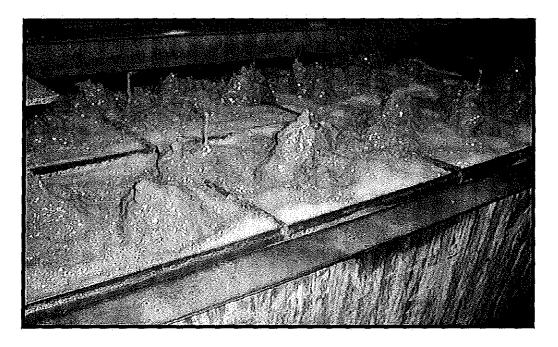


Figure 5-14 Detail of Air Agitation

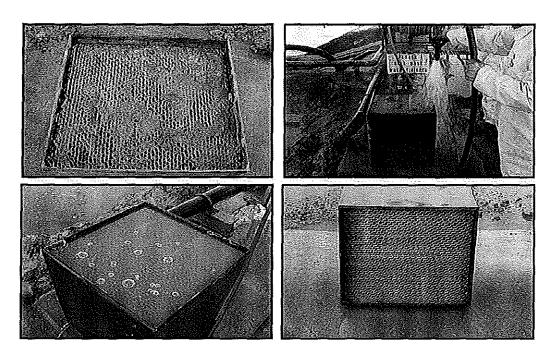


Figure 5-15 Elements Before Washing, During Spray-Down, Soaking, and After Washing

Figure 5-16 and Figure 5-17 show catalyst elements being washed/rinsed. Figure 5-17 shows, in particular, ash that is removed during the process. This type of washing would typically be used for the final rinse of the catalyst, but also may be used in lieu of, or in conjunction with, soaking.



Figure 5-16 Catalyst Elements Being Washed/Rinsed

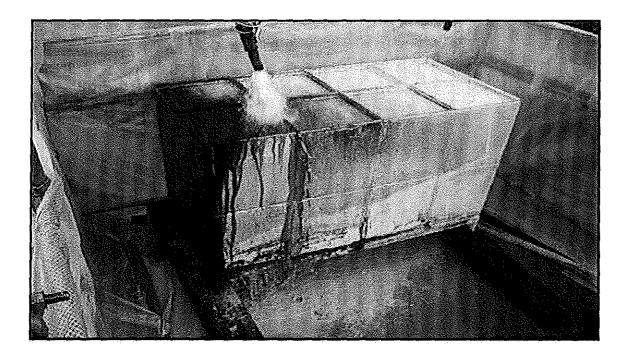


Figure 5-17
Catalyst Elements Being Washed/Rinsed with Removed Ash Visible

### Drying

After completion of the wet processing phase of the catalyst treatment, the catalyst is air dried. In this "drip-dry" process, no particular effort was made to force air through the catalyst with heating, etc. After this step, the catalyst can be stored for future use, or can be re-installed into the reactor.

#### **Process Effectiveness**

The effectiveness of the washing is best established through the measurement of catalyst activity before and after treatment, along with visual inspections of the catalyst cleanliness, where the proportion of open channels can be determined. Figure 5-18 shows the relative activity of three catalyst samples before and after washing for one of the PRB washing cases conducted at 15,000 hours of operation. These data were acquired with samples for which the fouling was representative of the full scale installation; thus, the noted improvement in activity includes effects from both the removal of fouling material, and any effects on the intrinsic activity of the catalyst itself. The data show some variation between the samples, as would be expected, but also show the marked improvement in the catalyst functionality. Complementary data, shown in Figure 5-19, shows the effect on certain chemical constituents of the catalyst, associated with common PRB poisons and ash constituents.

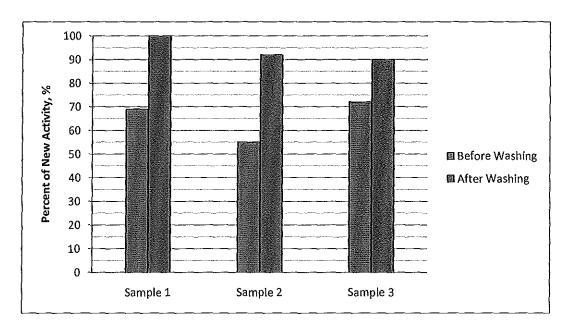


Figure 5-18
Effectiveness of Washing on Relative Catalyst Activity – PRB Case

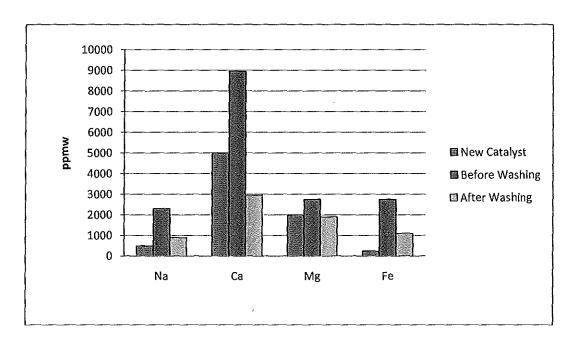


Figure 5-19
Washing Effect on Chemical Constituents – PRB Case

Figure 5-20 shows the relative activity for the eastern bituminous case. This data was taken at a wash that occurred at 28,000 hours of operation, and shows a clear improvement in activity which included effects associated with fouling.

Overall, the results of Case #3 show that the washing was effective at restoring the functionality of the catalyst. Case #3 data are especially valuable because they describe washing effectiveness on similar catalyst associated with both PRB and eastern bituminous fuels.

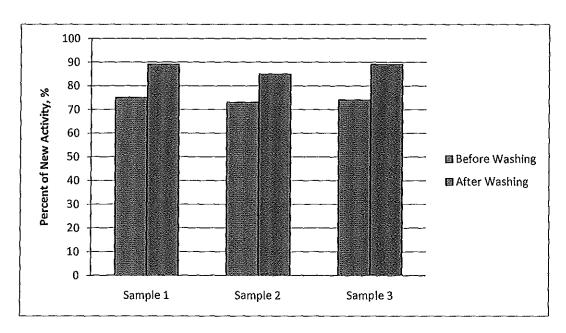


Figure 5-20
Washing Effect on Relative Activity – Eastern Bituminous Case

### **Overall Washing Experience Summary and Recommendations**

Based upon the available information, the effectiveness of catalyst washing appears to be quite good. Although the volume of data is not extensive, multiple fuels and catalyst types are represented, offering some confidence in the overall effectiveness of washing. The following bullet items highlight some of the findings from the industry washing experience to date.

### Highlights of Industry Experience

- Catalyst washing is generally effective at removing physical fouling, helping to restore the functionality of the catalyst.
- The intrinsic activity of the catalyst does not appear to be substantially adversely affected by washing.
- Although washing is not specifically designed to remove chemically bound deactivation species, some reduction of these species may occur.
- The applicability of washing to any particular batch of catalyst is highly case-specific.

- Catalyst experiencing long-term chemical deactivation, such as with arsenic poisoning, will
  not likely respond favorably to washing, unless physical fouling is also playing a large role in
  the catalyst performance.
- Relatively young catalysts experiencing catastrophic plugging, such as with LPA, are very good candidates for washing, since the underlying activity of the catalyst is still high.
- As catalysts age due to long-term poisoning and general attrition, washing may become less
  viable as a means of restoring activity, especially in absence of a physical fouling component
  to the deactivation.
- Honeycomb and corrugated catalysts are well represented in the industry washing experience. No experience with plate catalysts was reported.
- Catalyst washing technologies range from decidedly low-tech processes, to relatively hightech proprietary processes. Low-tech processing can be performed under the direction of the utility itself, while high-tech processes are typically managed by specialized external technology firms.
- Washing may be very attractive compared to new catalyst purchase in terms of economics.
   The most attractive economic scenario is the treatment of relatively young catalyst for which the underlying (intrinsic) activity is still high.
- Logistics will play a role in the decision to wash catalyst, since allowances must be made for the actual processing time. This is contrasted with new catalyst purchase, where the replacement catalyst is available for immediate installation into the reactor upon removal of the old catalyst.
- Washing effects on SO<sub>2</sub> to SO<sub>3</sub> conversion needs to be further investigated. Particularly in units burning high sulfur fuels.

### Recommendations for Washing

Based upon the report findings, several washing recommendations have been developed as follows;

- As a preliminary step, the mode of deactivation (i.e. physical or chemical) will help to
  determine if washing would be effective. As mentioned, if chemical deactivation is playing a
  major role in the functionality of the catalyst (such as arsenic poisoning), the catalyst may not
  be a good candidate for washing, since washing is most appropriate for addressing loss of
  functionality associated with physical issues.
- Trial testing of catalyst samples (which includes laboratory assessment of the effects on
  intrinsic activity, as well as an assessment of the physical improvements in the catalyst)
  should be utilized, if possible, to help determine the optimal treatment parameters and
  establish a prediction of the process effectiveness. This information can help to determine the
  relative economics of the various treatment options, as well as offer a basis of comparison to
  new catalyst purchase.
- The catalyst OEM is likely to be a good source for laboratory testing, and potential advice as to critical washing parameters. Independent catalyst testing laboratories can also provide the needed laboratory testing support, and may be able to provide advice relative to washing procedures, as well.
- The determination of the actual washing procedures and optimum process parameters must be done on a case-by-case basis. Many parameters such as soak time, level of agitation, etc.,

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will be dictated by the condition of the catalyst, as well as the original design of the catalyst. Flexibility in modifying the catalyst washing procedures in real time will be helpful in maximizing the treatment effectiveness.

- Principal process parameters that must be determined include: the dry cleaning needs, soak
  time and solution characteristics (water quality will likely be an important factor), level of
  agitation, rinse water requirements, and drying requirements.
- Firms are available which can provide turn-key catalyst washing services utilizing proprietary methods. These are choices for utilities that want to minimize the internal effort related to the actual task of washing the catalyst. As an alternative, utilities may undertake washing with very little external support, with the only outside support being laboratory testing for the evaluation of the catalyst before and after processing.

## 6 RECOMMENDED FUTURE WORK

The current project has identified several areas for which additional work would be of great benefit to the industry.

Catalyst Metals Recycling – A continuation of the current recycle work to further develop and refine the process for metal recoveries from the ceramic portion of spent catalyst is recommended (particularly vanadium, tungsten, and molybdenum), given that the initial results are very promising and the potential benefits to the industry are significant. Additional lab-scale and pilot-scale testing is required to further develop a recycling process. In addition finding a use for the titania (and avoiding disposal costs) would be a huge benefit to the overall recycling process. At minimum, finding a low-value use for titania would allow disposal costs to be avoided and would be environmentally attractive.

Catalyst Re-Use – Further investigation into the utilization of spent SCR catalyst in cement, concrete, and flowable fill products as a recycle route for spent catalyst appears to be warranted. Data from other catalyst types is encouraging, but an experimental program to assess the behavior of spent SCR catalyst in these products would help to establish the viability of such a process. Recommended work would include both performance and environmental aspects of catalyst re-use in these products.

On-Site Washing – The technical level of various on-site washing processes varies greatly. Some firm guidance to utilities undertaking on-site catalyst washing without utilizing an external specialty firm would be beneficial. An experimental program establishing basic best-practice washing procedures, including such parameters as water quality, cleaning solution characteristics, agitation guidelines, drying procedures, and followed by catalyst performance testing would be highly valuable.

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# **A**DETAILED SURVEY RESULTS

## Cases A to G

Case	Α	В	С	D	E	F	G
Volume of Catalyst	790	167	876	1424	434	555	60
SCR Number of Layers in Use	3	3	2	2	2	3	2
Layer that Catalyst was Located	1	1	2	1 and 3	3	4	1
Catalyst Age (hrs)	1500	28254	7200	3600 14400	18000	18000	~~9,400
Design Life of Catalyst (hrs)	16000	24000	16000	16000	16000	16000	16,000 hrs before layer addition
Catalyst Type	HC	HC	HC	HC	НС	нс	HC
Initial Catalyst Activity							Unknown
Final Catalyst Activity	K/Ko= 1.0 after on-site cleaning	Deactivation rate is 20% per Envirotherm testing					38-40 before regen / 42.1 after regen
Initial SO/SO <sub>3</sub>			0.29 @	1.11 @	0.39 @	0.43 @	.75%/layer max
Conversion			720 degrees F	780 degrees F	730 degrees F	700 degrees F	guaranteed (not lab tested)
Final SO <sub>2</sub> /SO <sub>3</sub> Conversion							Unknown before regen / After regen = 0.58%
Year Round Operation	N	Υ	N	N	N	N	N
SCR By-Pass available	Y	N	Υ	Y	Y	Y	Y

Case	Α	В	С	D	E	F	G
High/Low Dust Configuration	Н	Low	Н	Н	Н	Н	н
Sootblowing Type	Steam Sootblowers	Heated air sootblowers about twice per day (continuous rotation)	Originally steam Now SH	Originally steam Now SH	Originally air Now SH	Originally air Now SH	Sootblowers
General Effectiveness of Sootblowing	Poor, problems with popcorn ash	Poor (honeycomb catalyst will plug completely forcing a shutdown for cleaning, plate type seems to be much better but still plugs some)	AIG side of top layer needs vacuumed	No vacuuming required but catalyst is plugged w/LPA			
Routine Outage Procedures	Vacuum at end of ozone season and blow with compressed air	Vacuum and blown out with compressed air (cleans up well)	Vacuum all layers during outage	Vacuum all layers during outage	Vacuum all layers during outage	Vacuum all layers during outage	None
SCR Design Operating Temperature (F)	650	555-800	HS-626 LS-576	HS-626 LS-578	625	560	641
SCR Actual Operating Temperature (F)	650	710					615-645
Boiler Size	750	484 gross	360 MW	590 MW	345 MW	400	795 MW
Boiler Type	T-Fired	Wall fired PC	Cyclone	Cyclone	Single Wall		Opposed Wall Fired

Case	Α	В	С	D	E	F	G
Wet/Dry Bottom Config.	wet	dry					Wet
Coal Type	Eastern Bituminous (central Appalachian), 1.2% S	PRB	PRB	PRB	PRB	Blend 40PRB/60BIT	60% PRB / 40% E Bit
Biomass Co-firing or Coal Additives?	N	N	N	N	N	N	N
Coal Contract Type	Long-term and some spot market purchases	Long term	LT	LT	LT	LT	Long-term
Primary Deactivation Mechanism	Severe LPA plugging	Extreme fouling	Failure mechanism strictly due to fouling – actual PRB poisoning rate consistent with predictions	Failure mechanism strictly due to fouling – actual PRB poisoning rate consistent with predictions	Failure mechanism strictly due to fouling – actual PRB poisoning rate consistent with predictions	Failure mechanism strictly due to fouling – actual PRB poisoning rate consistent with predictions	Extreme fouling due to LPA – accumulated over time

Case	Α	В	С	D	E	F	G
Washing/Regenerat ion/Rejuvenation Considerations and Activities	On-site washing using specialty service provider. Catalyst removed from reactor for processing	Options considered but material was considered undesirable or inapplicable for treatment, or treatment scenario did not match utility needs.	Catalyst washed on-site via internally developed process. Performed by local labor contractor under direction of utility. Permit for on-site wastewater disposal obtained. 18	Catalyst washed on-site via internally developed process. Performed by local labor contractor under direction of utility. Permit for on-site waste-water disposal obtained. 19			1,155 me of catalyst regenerated offsite. 60 m3 of catalyst material not repairable — in these cases the module superstructure was re-used and filled with alternate catalyst material.
Treatment Effectiveness	Very good. Returned to near-new condition. 95% recovery in open channels – activity to near new (little chemical deactivation anyway)		Very effective at removing fouling – 90% open channel rate achieved	Very effective at removing fouling – 90% open channel rate achieved			
Recycling Activities					Baskets dismantled  – bulk metal sold for scrap.	Baskets dismantled – bulk metal sold for scrap.	

<sup>&</sup>lt;sup>18</sup> Utility noted that the wash-water pH was 6.6-7.0. Modules should be fired after washing, but 100% drying is not required. Slow ramp-up in temperature upon SCR startup will dry the modules.

<sup>&</sup>lt;sup>19</sup> Utility noted that the wash-water pH was 6.6-7.0. Modules should be fired after washing, but 100% drying is not required. Slow ramp-up in temperature upon SCR startup will dry the modules.

Case	Α	В	С	D	E	F	G
Disposal Preparation		None			Baskets dismantled and catalyst elements removed for disposal	Baskets dismantled and catalyst elements removed for disposal	Catalyst removed from module
Disposal Scenario		Complete modules sent to off-site non- hazardous landfill.			Catalyst material sent to on-site landfill. Material crushed with dozer in landfill.	Catalyst material sent to on-site landfill. Material crushed with dozer in landfill.	Portion of catalyst unsuitable for regeneration was disposed of in off- site non- hazardous land-fill
Economics		Disposal cost was 16,000 for the layer, roughly \$100/m3	Approximate cost - \$600/module for treatment	Approximate cost - \$600/module for treatment	Cost was roughly \$150/module to crush	Cost was roughly \$150/module to crush	\$7,500 for 30 modules (60 m3) disposed of (\$250/module)

## Cases H to N

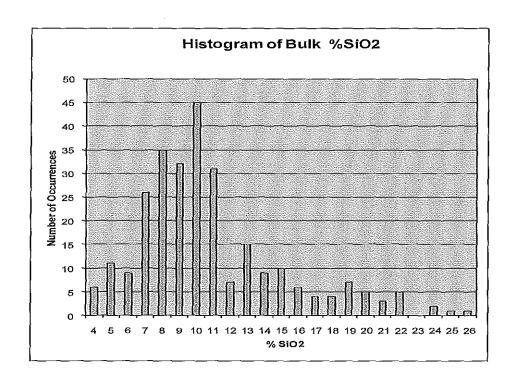
Case	Н	1	J	Κ	L	M	N
Volume of Catalyst	395	395	213	150	477	157	508
SCR Number of Layers in Use	3	3	3	2.5	2	2	2
Layer that Catalyst was Located	Installed in Multiple layers	Installed in Multiple layers	1	3 (half layer)	1 and 2	1	1 and 3
Catalyst Age (hrs)	18,000	18,000	20,000	14000	23,000	8,000	21,000
Design Life of Catalyst (hrs)	16000	16000	16000	16000	24000	24,000	24,000
Catalyst Type	HC	HC	HC	Plate	Plate	HC	HC
Initial Catalyst Activity						37.7 m/hr	
Final Catalyst Activity	K/Ko = 0.75	K/Ko = 0.75	K/Ko=0.70	K/Ko=0.74	K/Ko=0.72 prior to wetting	24.6 m/hr, K/Ko = 0.65	
Initial SO2/SO3 Conversion	.33	.20	.33	0.44% (for full layer – 0.22% for half layer)		i	
Final SO2/SO3 Conversion							
Year Round Operation	N	N	N	Y	Y	Y	Y
SCR By-Pass available	Y	Y	Y	Y	N	N	N
High/Low Dust Configuration	Н	н	Н	Н	Н	Н	Н

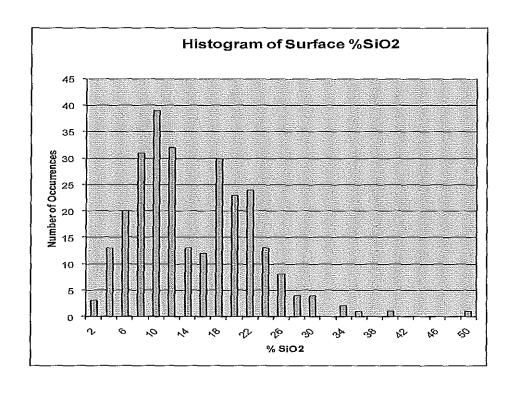
Case	Н	1	J	к	L	M	N
Sootblowing Type	Steam Sootblowers	Steam Sootblowers	Steam Sootblowers	Sonic Horns	Sonic Horns	Sonic Horns	Sonic Horns
General Effectiveness of Sootblowing	Poor, problems with popcorn ash	Poor, problems with popcorn ash	good	Good	Vacuuming required	Vacuuming required	Vacuuming required
Routine Outage Procedures	Vacuum at end of ozone season and blow with compressed air	Vacuum at end of ozone season and blow with compressed air	Vacuumed every other season	No specific routine maintenance	Inspect, vacuum deposits	Inspect, vacuum deposits	Inspect, vacuum deposits
SCR Design Operating Temperature (F)	650	650	Up to 750	700 F	695 F	675 F	675 F
SCR Actual Operating Temperature (F)	650	650	Up to 750	700	597-725 F	597-725 F	597-725 F
Boiler Size	750	950	480	500	600	600	600
Boiler Type	T-Fired	T-Fired	Wall-fired	Wall-fired	Wall-fired	Wall-fired	Wall-fired
Wet/Dry Bottom Config.	wet	wet	wet	wet	dry	dry	dry
Coal Type	Eastern Bituminous (central Appalachian), 1.2% S	Eastern Bituminous (central Appalachian), 1.2% S	Central Appalachian, 1.2 % S	Columbian and Illinois Basin	PRB	PRB	PRB
Biomass Co-firing or Coal Additives?	N	N	N	N	N	N.	N
Coal Contract Type	Long-term and some spot market purchases	Long-term and some spot market purchases	Long-term and spot	spot	Long term and spot as needed	Long term and spot as needed	Long term and spot as needed

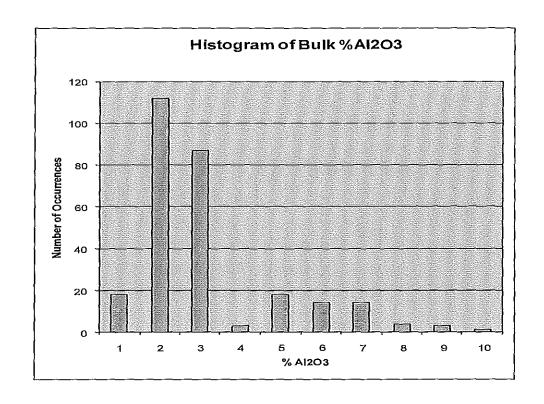
Case	Н	1	J	К	L	М	N
Primary Deactivation Mechanism	plugging a major factor in decision to	Arsenic poisoning – but plugging a major factor in decision to replace catalyst	Arsenic poisoning	Arsenic poisoning	LPA ash plugging	Economizer tube leak wet portion of layer	Combination of calcium sulfate and phosphorus poisoning and LPA pluggage
Washing/Regenerat ion/Rejuvenation Considerations and Activities			Off-site regeneration considered, but internal cash- flow issues made purchase more attractive				Options considered but trial tests proved ineffective, logistics a factor (short notice to replace, storage, etc.)
Treatment Effectiveness							
Recycling Activities	Bulk module metals recovered — some module superstructure reused for new catalysts, others sold for scrap	Bulk module metals recovered — some module superstructure reused for new catalysts, others sold for scrap	Bulk module metals recovered – module superstructure reused for new catalysts	None		Steel modules reused, catalyst removed and replaced with new catalyst in-situ	Catalyst material removed from module, module sent to manufacturer for credit and reuse (screens also returned)
Disposal Preparation	Catalyst crushed prior to disposal	Catalyst crushed prior to disposal	Catalyst crushed prior to disposal	None	None	Catalyst logs crushed	Removal of catalyst from modules
Disposal Scenario	Crushed catalyst sent to off-site non-hazardous land-fill	Crushed catalyst sent to off-site non-hazardous land-fill	Crushed catalyst sent to off-site non-hazardous land-fill	Entire baskets sent to off-site landfill – utilized hazardous waste landfill, but material was deemed nonhazardous	Entire baskets disposed by supplying contractor, off-site non-hazardous landfill after TCLP test	Removed logs sent to off-site non-hazardous landfill after TCLP test	Removed catalyst crushed and sent to off-site non- hazardous landfill after TCLP testing

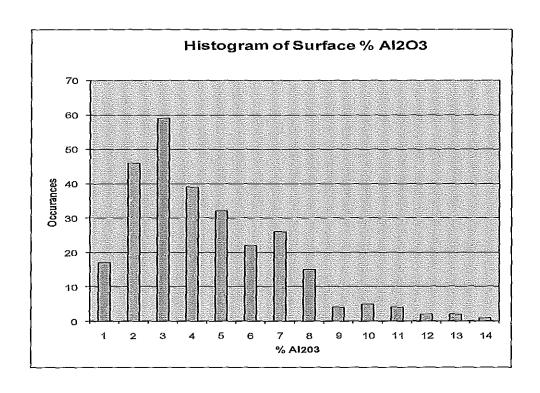
Case	Н	I	J	К	L	М	N
Economics	Overall costs a strand function of disposal volume and cost. Most positive cash flow obtained by re-using module superstructure (\$100-200K). Very marginal benefit with removing bulk metals for scrap	Overall costs a strand function of disposal volume and cost. Most positive cash flow obtained by re-using module superstructure (\$100-200K). Very marginal benefit with removing bulk metals for scrap					

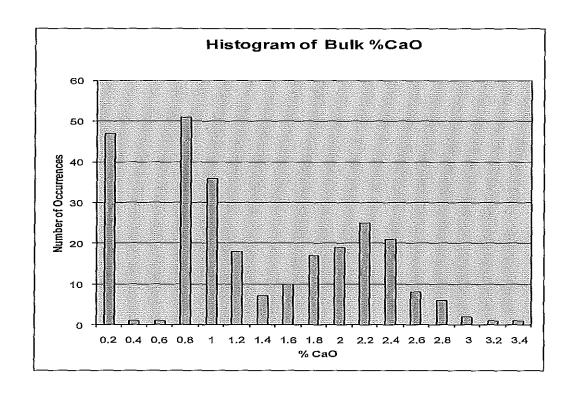
# **B**HISTOGRAMS OF CATALYST CONSTITUENTS

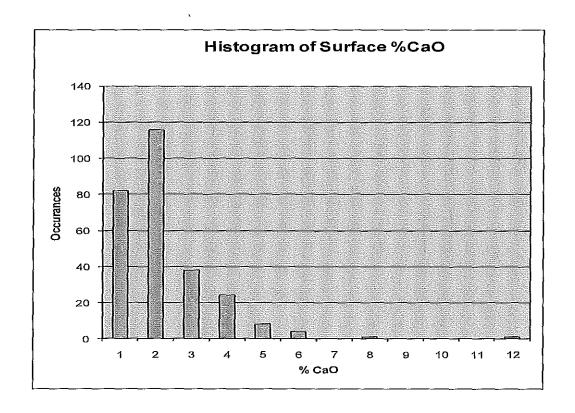


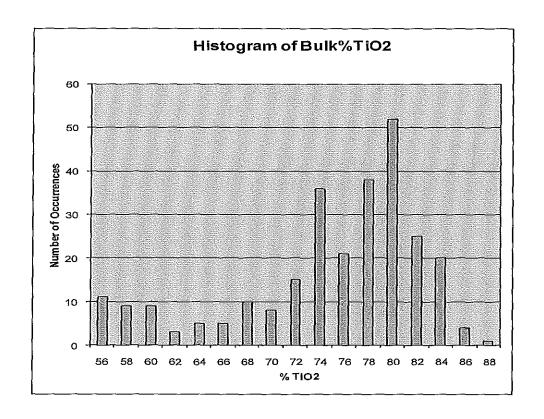


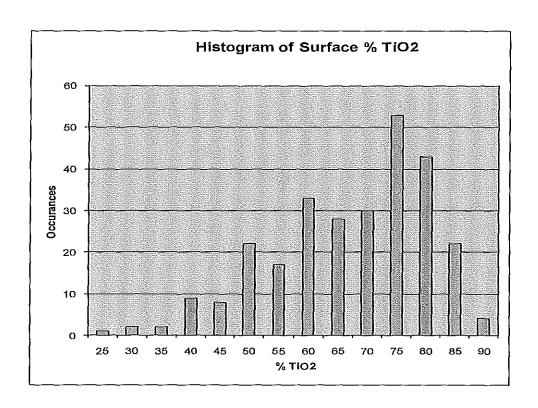


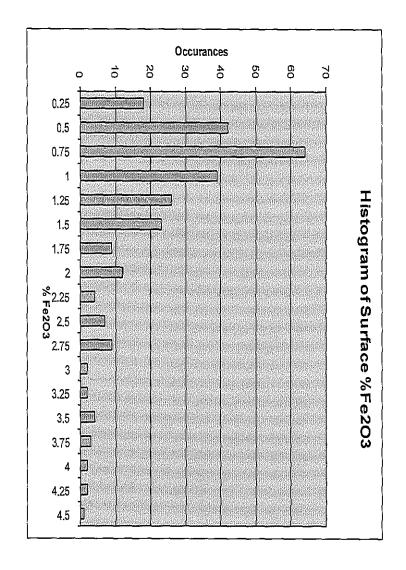


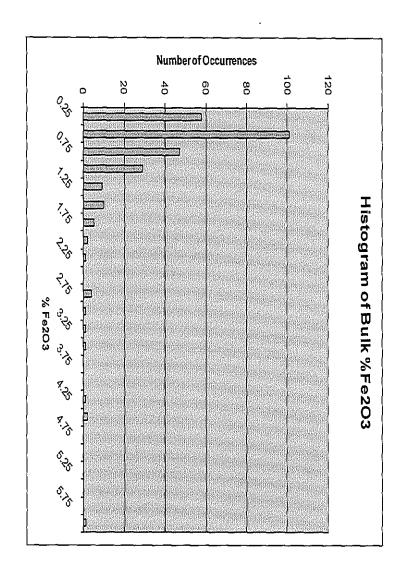


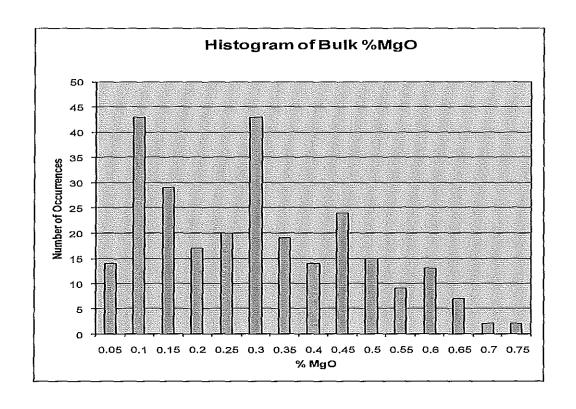


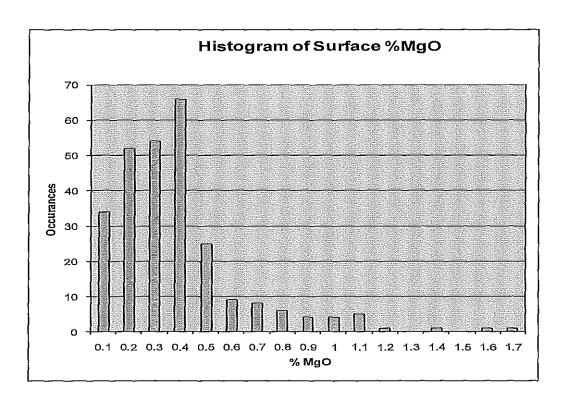


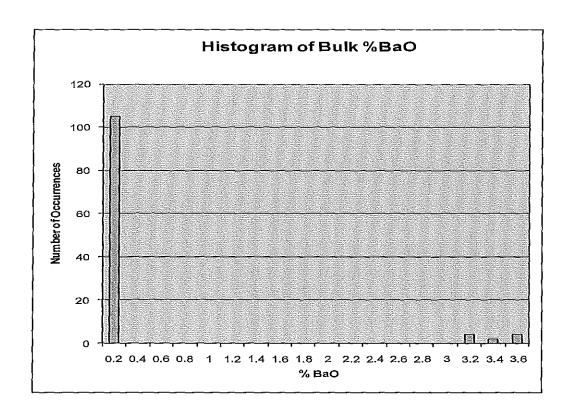


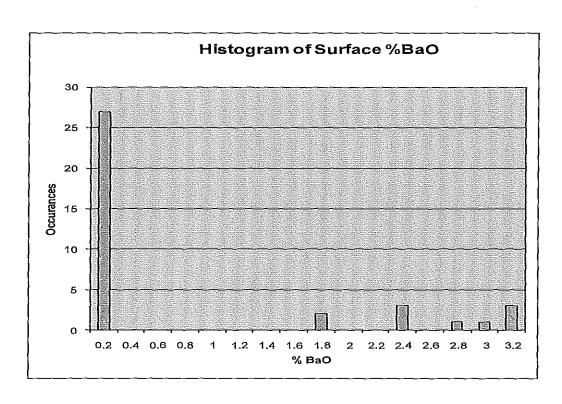


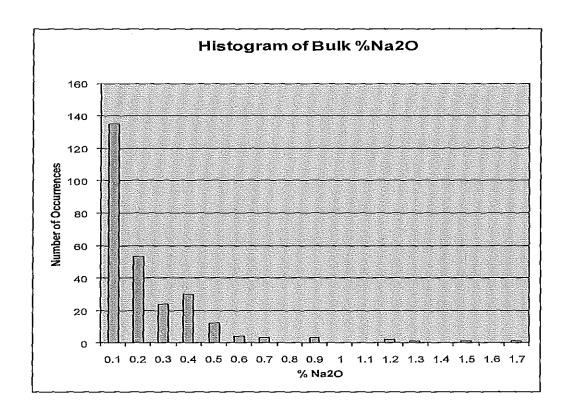


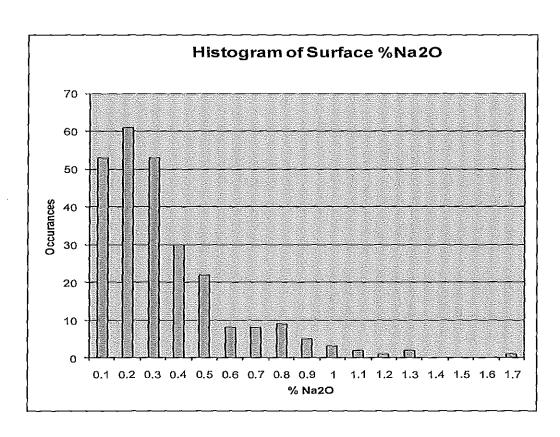


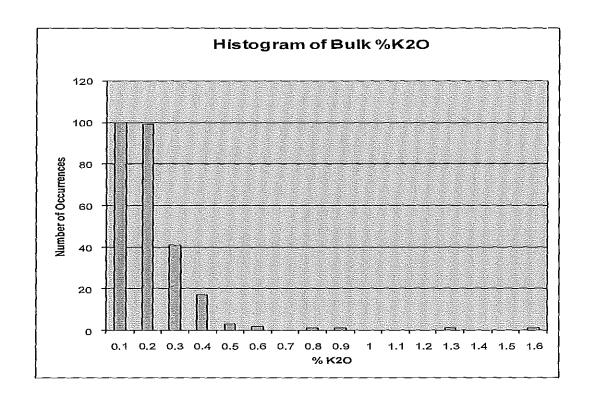


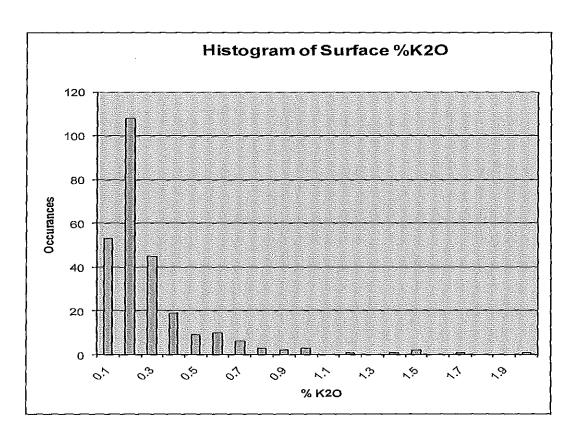


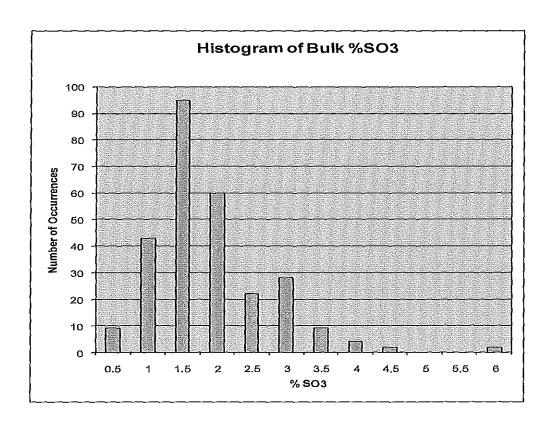


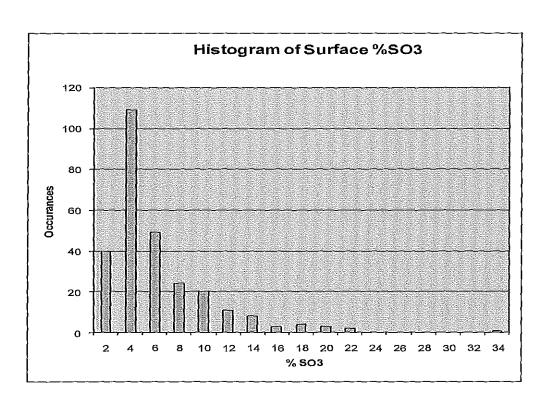


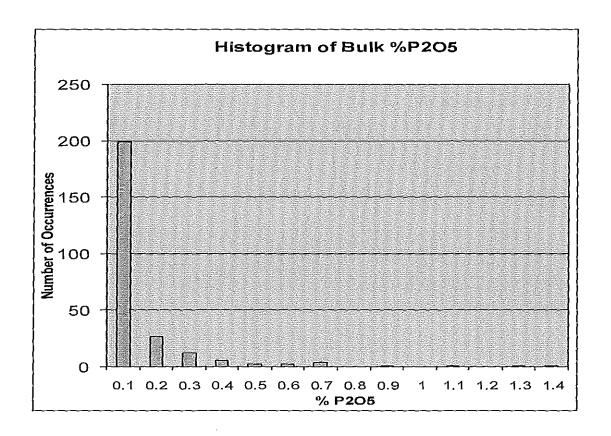


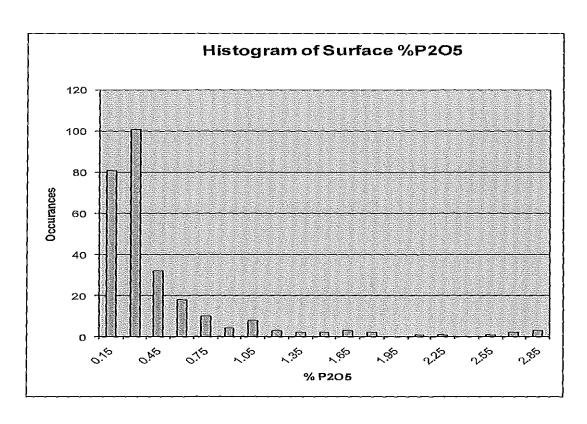


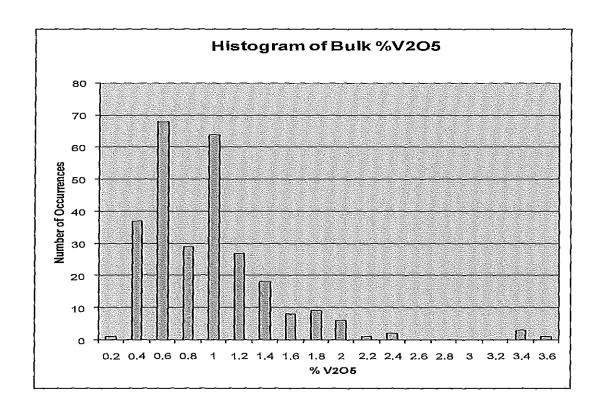


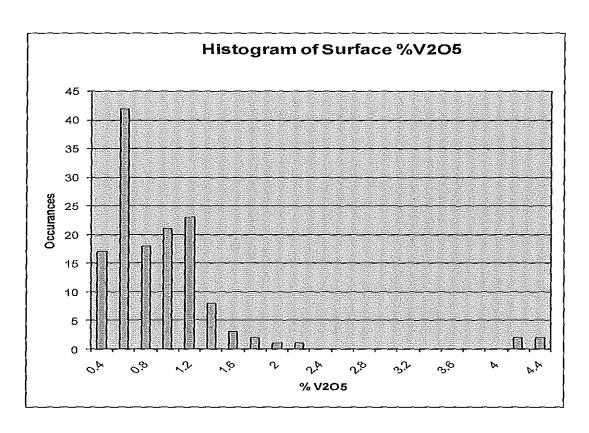


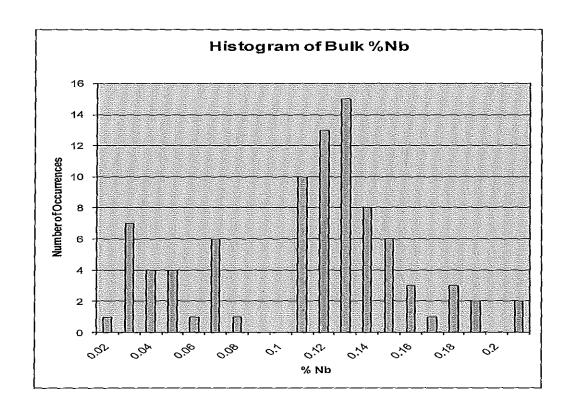


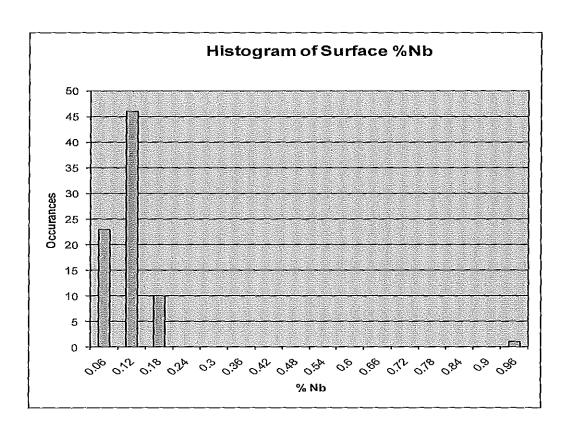


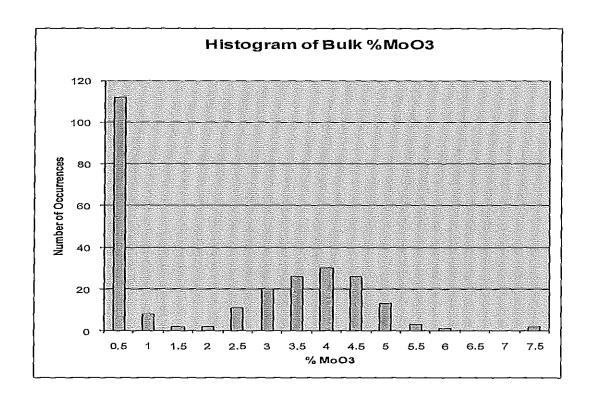


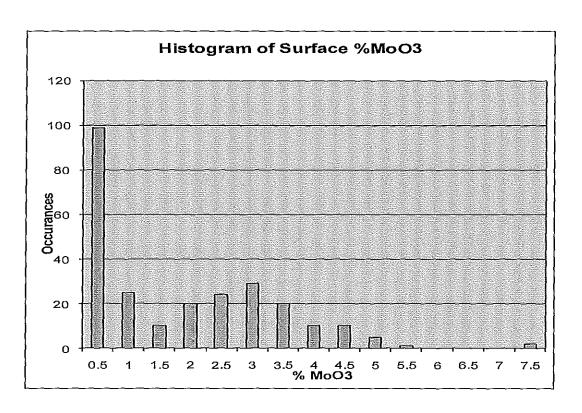


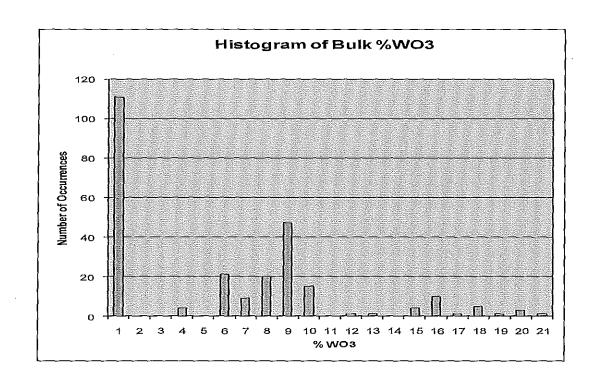


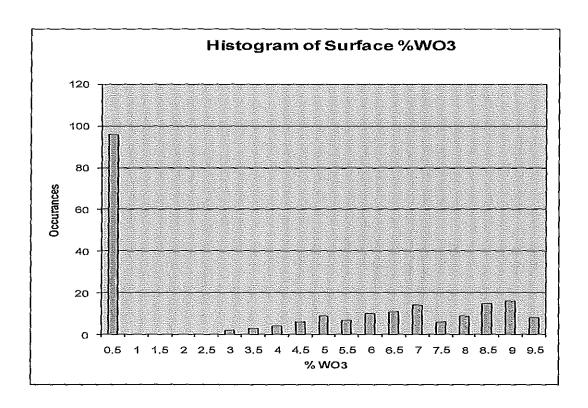


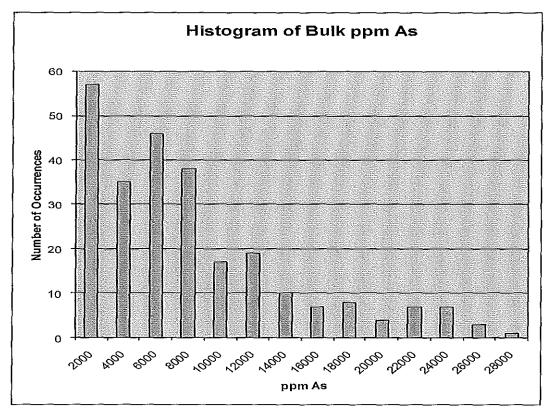


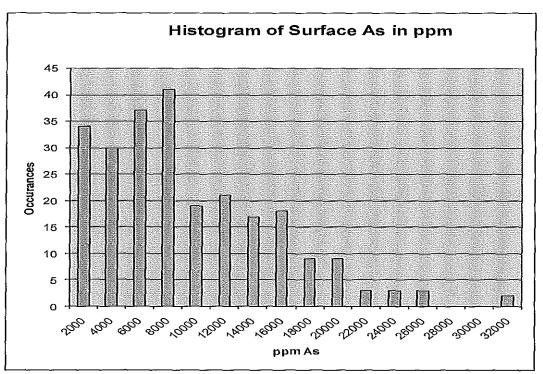


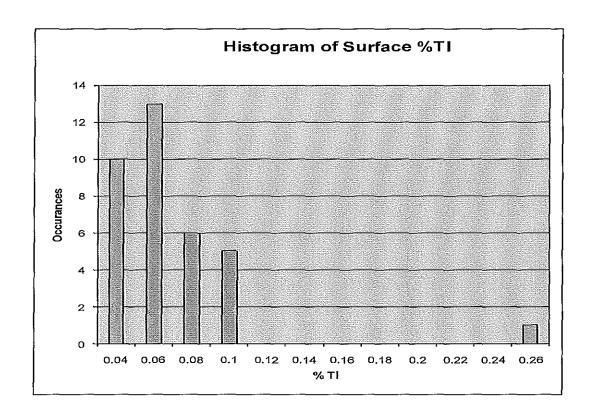












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Table 3-1 Summary of Survey Data

Parameter	Volume of Catalyst (m³)	Proportion
Total volume of catalyst in survey	6,601	
Volume washed on-site	3,090	47%
Catalyst Disposed (with or without bulk metal recovery)	3,511	53%
Disposed catalyst that disposed of modules as-ls	794	23%
Disposed catalyst that included bulk metal recovery	2,717	77%
Disposed catalyst that included crushing of ceramic portion when bulk metals were recovered	2717	100%
Volume of disposed catalyst utilizing on-site landfill	989	28%
Volume of disposed catalyst utilizing off-site landfill	2,522	72%
Catalyst that deactivated due to ash fouling (controlling or major reason for action)	6,081	92%
PRB application	4,043	61%
Eastern Bituminous application	1,943	29%
Blended fuel application	6,15	9%
Honeycomb type catalyst	5,974	91%
Plate type catalyst	627	9%
Catalyst Reaching (or near) design life	4,629	70%
Weighted average age of catalyst at time of removal	13,000 hrs	
Disposal cost	\$100-125 per m³	
On-Site washing cost	\$300 per m³	
On-Site washing effectiveness	85-95% functionality recovery	

#### Disposal and Recycle Activities

The data in Table 3-1 show the disposal and recycle activities associated with 3,090 m³ of catalyst. Of this volume, 23% was disposed of as-is, i.e., the entire modules were disposed of basically as removed from the reactor. Thus, the proportion of catalyst for which bulk metal recovery (module superstructure) occurred was very high, at 77%. This is an encouraging rate of recycle of the bulk metal and tends to highlight the ease with which this type of recycle can be performed. Of the catalyst for which the bulk metals were recovered, all was crushed in some manner to reduce volume. This pre-disposal activity minimizes landfill volume.

The survey responses noted that some of the module steel was re-used as-is for new catalyst modules. The proportion of catalyst module steel re-used in this manner was quite small, although the exact amount was not determined. The majority of the recovered bulk module steel was simply sold for scrap.

The survey data indicate that roughly half the catalyst disposed (28%) utilized an on-site landfill, while the remainder used off-site facilities. None of the catalyst included in the survey was deemed to be a hazardous waste, although in one instance, a hazardous waste landfill was utilized for convenience purposes only.

# 6 PROJECT SUMMARY AND CONCLUSIONS

Overall, the project has made significant headway in evaluating potential technologies for the recycle/re-use of spent SCR catalysts. Table 6-1 summarizes the findings, and ranks the evaluated technologies in terms of maturity and perceived requirements for commercialization (with a rank of 1 being the most attractive).

Table 6-1 Findings Summary

Rank	Process	Findings Summary
1	Cement Kiln Co-Processing	Most mature of the technologies evaluated, with limited requirements for commercialization. Inherent process characteristics very attractive for coprocessing wastes, even those containing potentially hazardous components. Overall technology and handling infrastructure is in place. Industry already accepts large volumes of highly varied waste materials. Requires "tipping fee" with economics most attractive when landfill disposal costs are high.
2	Mineral Filler Applications	Initial results good, but additional development required for commercialization. Some product liability concerns, but in-house projects on case-by-case basis may help alleviate concerns and be most attractive overall. Economics are unclear, but the catalyst would not replace a high-value material, thereby limiting the economic incentive.
3	Boller Slag Incorporation	Results to date indicate that the process is technically feasible, but significant development work would be required for full commercialization, especially as related to adverse boiler impacts. Technology has been practiced at full-scale overseas, but the configuration was significantly different from configurations utilized domestically. Economics are unclear, but potentially attractive if offset disposal costs are high.
4	Iron/Steel-Making Applications	A number of hurdles to commercialization were determined, which potentially severely impact widespread commercialization. Development requirements are likely to be extensive, and economics will not likely be improved compared to other technologies.

Cement kiln co-processing is currently the most mature and in many ways the most attractive of the technologies evaluated. Co-processing is commonly practiced with large volumes of both liquid and solid waste materials, having both hazardous and non-hazardous waste designations. The infrastructure already in place greatly streamlines the inclusion of spent SCR catalyst, and the only process "development" step necessary for any particular batch of catalyst to be processed is to evaluate the catalyst composition and determine appropriate feed rates, etc. The intrinsic characteristics of cement kilns make them very attractive for the processing of solid materials and help to prevent emissions. From an economics standpoint, a "tipping fee" would be charged by the co-processor for the recycle/re-use service, since the catalyst does not replace any of the raw material feed to the kiln, and therefore there are no direct benefits to co-processing catalyst from the co-processor's standpoint. Utilities will likely find co-processing attractive from a direct cost standpoint in cases where landfill disposal costs are relatively high, greater

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#### Conclusions

In general, the co-processing of wastes in cement kilns is a highly mature technology, with large volumes of waste materials being processed world-wide in this manner. Although historically spent SCR catalyst has not been co-processed, the application of this material to co-processing is relatively straightforward. In fact, of all the recycle/re-use routes evaluated to date by EPRI, it appears that co-processing is the most mature and easily implemented technology assessed. Co-processing is particularly attractive because a route for waste evaluation, handling, transport, treatment, emissions mitigation, and product quality control, is already in place. This greatly streamlines the overall process development, since spent catalyst basically represents simply an additional waste type to be included in the myriad of wastes already being processed.

From an emissions and general environmental standpoint, co-processing is attractive, since the inherent nature of the process results in highly effective environmental controls, and the process avoids the perpetual liability and public concern associated with landfilling. It offers a viable alternative to landfilling and may be especially important in a regulatory atmosphere which has become increasingly stringent on coal-fired boiler waste and by-product disposal.

Economically, it will be difficult for co-processing to compete directly with low-cost landfill disposal if consideration is not given to liability and environmental good-will, but as landfill disposal costs increase, co-processing becomes more and more attractive in a direct economic sense. This is especially true for waste catalysts that are treated as hazardous.

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# **5**UTILIZATION OF SPENT CATALYST IN IRON/STEEL-MAKING

#### Introduction

Previous work identified iron/steel-making as an industry which could possibly make use of spent SCR catalyst. <sup>19</sup> The production of steel encompasses many different raw materials, processes, and products, and many processes have been developed to take advantage of various ores and by-product materials to improve productivity and to influence the characteristics of the product steel. Spent SCR catalyst may have some applicability in the steel industry as a slagging or fluxing material, and potentially as a vanadium source, since most catalyst formulations contain vanadium.

The prior work determined that no domestic process was currently being implemented which actually utilized spent SCR catalyst in steel-making. However, several processes are known which could potentially take advantage of the material, primarily based upon patent literature. The current effort focused on discussions with various steel manufacturers and associated steel research consortiums to determine the feasibility of utilizing spent catalyst in iron/steel-related manufacturing, as well as to determine what steps would be necessary to develop the process.

#### **Contacted Firms**

As mentioned above, several firms associated with iron and steel-making were contacted. Some of these are listed below for reference. In general, they represent the major research consortiums and heavy manufacturers of iron and steel in the U.S.

#### **Primary Contact Firms**

- Association for Iron and Steel Technology
- Advanced Steel Processing and Products Research Center
- Center for Iron and Steelmaking Research
- U.S. DOE Office of Energy Efficiency & Renewable Energy
- United States Steel Corporation
- ArcelorMittal

<sup>&</sup>lt;sup>19</sup> See EPRI Technical Report entitled "Selective Catalytic Reduction (SCR) Recycle, Re-Use and Disposal Options," Product ID: 1017554, 12/16/2009.

<sup>&</sup>lt;sup>20</sup> See referenced U.S. Patents; #4,071,355, #4,274,867, and #4,731,112, in the above referenced EPRI report.

#### **Findings**

Consistent with the previous determinations, no utilization of spent SCR catalyst or similar material is currently being practiced domestically, and the discussions revealed that there would be significant hurdles related to the implementation of potential technologies that would utilize spent SCR catalyst in iron and steel-making. The major noted hurdles are listed below.

#### Major Hurdles to Commercialization

- Raw materials present in spent catalyst not of high value to the industry
- High technical liability present in applying the catalyst to most processes
- Limited potential supply of spent catalyst
- Large number of intermittent generators of spent catalyst
- Composition of spent catalyst variable
- Multiple contaminants present potentially leading to emissions and health and safety issues
- The industry as a whole is not generally familiar with processing non-metallic waste materials

Each of the above commercialization hurdles is discussed in some detail in the following report sections. Included in these discussions in most cases is an assessment of the severity of the hurdle and potential for overcoming the hurdle.

#### Value of Raw Materials Present in Spent Catalyst

As with the previously evaluated recycle/re-use technologies, the actual value of the raw materials contained in catalyst which would be useful to the industrial process of iron and steel-making is not large. Given that titania is not directly used in large quantities in iron and steel-making, and given that more valuable metal components of the catalyst, such as vanadium, are typically present in relatively small quantities, the catalyst has little intrinsic value. In addition, raw mineral resources (a portion of which would potentially be replaced by the catalyst), are generally plentiful and relatively inexpensive. This is especially true of low-grade titania ores, which the catalyst might replace. As a result, there is little incentive on the part of the iron/steel manufacturer to utilize spent SCR catalyst. Barring any extreme circumstances related to raw mineral supply, or radical changes in catalyst formulations, this hurdle is not expected to ease.

#### Technical Liability in Utilizing Spent Catalyst

Modern iron and steel-making processes rely on efficient and very well-controlled processes to produce materials with consistent characteristics. The maintaining of a consistent and well characterized raw feed stream is integral to this. By introducing spent catalyst into the process feed, there is a degree of technical liability involved, in that the catalyst may produce some unwanted adverse effect. This is similar to concerns for large boilers, where the potential adverse consequences of any process change must be well understood prior to undertaking the modification at full scale. Ultimately, the potential risk often outweighs the potential benefit, unless the potential process change is well vetted, and the perceived benefits are large. This represents a substantial hurdle to spent catalyst utilization, since a great deal of development work would potentially be required to insure that there were no adverse consequences associated

with implementing the re-use technology. Alleviation of this hurdle would require a substantial effort to develop and demonstrate the technology.

#### Limited Supply of Spent Catalyst Material

The iron and steel-making industry is characterized by large production facilities requiring substantial raw feed streams. Compared to these feed streams, even if catalyst were blended at a small ratio, the amount of spent catalyst available would likely not be sufficient to provide a continuous supply of material to a fully developed process in which the spent catalyst was a part. Alternately, intermittent processing of catalyst could be conducted, or catalyst could be used in a low-volume specialty steel manufacturing process. However, it is difficult to imagine that such a scenario would be economically or technically attractive given the low value of the raw catalyst material, and emissions and health and safety concerns (as discussed below). Processing of spent catalyst would likely become a "nuisance" activity, increasing liability, for minimal return. The supply of spent catalyst material is expected to increase over the coming years, but supply will likely be a factor in any developed recycle technology related to the iron and steel-making industry.

#### Large Number of Intermittent Generators

The nature of SCR installations dictates that there will be a relatively large number of facilities generating spent catalyst on an intermittent basis. This likely would be problematic for a recycle/re-use process which required a continuous supply of material. Further, the large number of individual generators of the spent catalyst would potentially complicate logistics greatly. One option might be to establish a "clearinghouse" where spent catalyst could be collected at a single location. This option might help to simplify logistics and stabilize the "outflow" of material. No such facility is in place, however, and a significant industry-wide commitment would be required to effectively pool the spent catalyst from the industry as a whole.

#### Variable Composition of Spent Catalyst Material

Spent SCR catalyst will vary in composition in terms of the constituents used in the original manufacture. (Variations in contaminants will also be present, as discussed in the following report section.) These constituents may represent metals that ultimately will be incorporated in the process products, or they may represent materials such as fluxing agents, that are utilized in the iron/steel-making process, but are not actually present in the product. The variability of these constituents will affect the general parameters of the parent iron/steel-making process. As a result, batches of catalyst may need to be evaluated on a case-by-case basis, further exacerbating issues related to catalyst supply and the large number of intermittent generators. Unless the parent iron-steel-making process was impervious to variability in catalyst composition, variability in general will likely represent a significant hurdle to the development of recycle/reuse processes that are globally applicable to the wide range of spent catalyst compositions that are produced by the utility industry.

#### **Catalyst Contaminants**

Contaminants in the spent catalyst may be problematic for the parent process from both a health and safety, and emissions perspective. Contaminants of concern, such as arsenic, may vary widely from catalyst to catalyst, potentially resulting in intermittent health and safety concerns associated with handling of the material, as well as emissions concerns. Unlike cement kilns (as discussed in the previous report sections), the iron/steel-making process may not have robust emissions control systems in place that are capable of handling the potential contaminants released from the catalyst. Further, the iron/steel industry, in general, has little familiarity in dealing with waste materials that are potentially hazardous. Catalyst batches would likely require evaluation on a case-by-case basis in terms of the contaminants present. A hazardous waste designation (a scenario which is most attractive in terms of finding an alternate recycle/re-use route) may be particularly problematic for the iron/steel industry, since they typically do not have hazardous waste feed materials and would be generally unfamiliar with such materials, and would lack necessary permits, etc. Thus, catalyst contamination will result in a major technical hurdle to process development under most conceivable scenarios.

#### Industry Familiarity with Processing Waste Materials

Unlike the cement industry where the co-processing of wastes is quite common, the iron/steel-making industry does not have a great degree of familiarity with such materials (excepting scrap metal wastes). Further, spent catalyst does not directly substitute for any materials commonly utilized in the iron/steel industry. As a result, there is no clear avenue in place for the iron/steel industry to evaluate and accept waste catalyst materials.

#### **Economics**

At present it is impossible to make any firm determination as to the potential economics of utilization of spent catalyst in iron/steel-making, due to the unknown nature of the exact process which might be utilized. It is clear, however, that the value of the catalyst to the iron/steel industry is quite low, since raw mineral materials, which the catalyst might replace, tend to be relatively low-cost. Further, considering the potential process upsets and emissions issues that may result from catalyst utilization, the processing of catalyst would need to be fee-driven, similar to other recycle routes investigated, to make it attractive to the processor. These fees would then have to be compared with other recycle/re-use options and disposal via landfilling. Thus, it is not expected that the economics would be particularly attractive compared to other options.

#### Conclusions

Given the present degree of commercialization and the significant hurdles that are present related to commercialization, it was determined that the development of a process within the iron/steel-making industry for the recycling/re-use of spent catalyst is not attractive at this time. It also appears clear given the low potential value of spent catalyst and the added potential requirements needed to utilize the material, that a "tipping fee" would need to be charged by the processor for the overall economics to become attractive. Certain iron/steel manufacturing processes (specialty processes in particular) could conceivably take advantage of spent SCR catalyst material, but the

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development of such a process is likely to require significant resources. As a result, and given the greater attractiveness of other recycle/re-use processes, it is not currently recommended that iron/steel-making be actively pursued as a recycle/re-use route, at least until such time as other options are exhausted. Continuing to follow trends in the iron/steel-making industry, especially in terms of the processing of waste materials would be advisable, but the general outlook is not expected to change dramatically in the near future.

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# 6 PROJECT SUMMARY AND CONCLUSIONS

Overall, the project has made significant headway in evaluating potential technologies for the recycle/re-use of spent SCR catalysts. Table 6-1 summarizes the findings, and ranks the evaluated technologies in terms of maturity and perceived requirements for commercialization (with a rank of 1 being the most attractive).

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1	Cement Kiln Co-Processing	Most mature of the technologies evaluated, with limited requirements for commercialization. Inherent process characteristics very attractive for coprocessing wastes, even those containing potentially hazardous components. Overall technology and handling infrastructure is in place. Industry already accepts large volumes of highly varied waste materials. Requires "tipping fee" with economics most attractive when landfill disposal costs are high.
2	Mineral Filler Applications	Initial results good, but additional development required for commercialization. Some product liability concerns, but in-house projects on case-by-case basis may help alleviate concerns and be most attractive overall. Economics are unclear, but the catalyst would not replace a high-value material, thereby limiting the economic incentive.
3	Boller Slag Incorporation	Results to date indicate that the process is technically feasible, but significant development work would be required for full commercialization, especially as related to adverse boiler impacts. Technology has been practiced at full-scale overseas, but the configuration was significantly different from configurations utilized domestically. Economics are unclear, but potentially attractive if offset disposal costs are high.
4	Iron/Steel-Making Applications	A number of hurdles to commercialization were determined, which potentially severely impact widespread commercialization. Development requirements are likely to be extensive, and economics will not likely be improved compared to other technologies.

Cement kiln co-processing is currently the most mature and in many ways the most attractive of the technologies evaluated. Co-processing is commonly practiced with large volumes of both liquid and solid waste materials, having both hazardous and non-hazardous waste designations. The infrastructure already in place greatly streamlines the inclusion of spent SCR catalyst, and the only process "development" step necessary for any particular batch of catalyst to be processed is to evaluate the catalyst composition and determine appropriate feed rates, etc. The intrinsic characteristics of cement kilns make them very attractive for the processing of solid materials and help to prevent emissions. From an economics standpoint, a "tipping fee" would be charged by the co-processor for the recycle/re-use service, since the catalyst does not replace any of the raw material feed to the kiln, and therefore there are no direct benefits to co-processing catalyst from the co-processor's standpoint. Utilities will likely find co-processing attractive from a direct cost standpoint in cases where landfill disposal costs are relatively high, greater

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than roughly \$200/ton. However, additional incentives for co-processing, such as potential liability reduction and environmental good-will, add to the attractiveness of co-processing.

The data acquired to date indicate that spent catalyst may be suitable for mineral filler applications, at least in terms of basic physical parameters. As a mineral filler, the catalyst would essentially act as an inert material, replacing such materials as powdered limestone and other naturally occurring minerals in such applications as bituminous concrete, asphaltic shingles, and plastic products. Additional studies are required for specific targeted applications to fully understand all potential impacts that the catalyst may have on the final product. Specifically, such issues as leachability and durability for specific applications would need to be addressed as a next step to full commercialization. As is the case with many other proposed utilization routes, the inherent value of the catalyst as a mineral filler is not large, and therefore most of the derived value of the utilization route is a result of avoided disposal costs.

The process of incorporation of spent catalyst into wet-bottom boiler slag appears to be technically viable, at least based on the analyses performed to date. However, significant process development activities would be required at pilot and demonstration scale to fully determine the potential for adverse effects and to establish detailed cost parameters. Since the process has the potential to affect boiler operations in general, there is a technical liability in implementing the technology unless the concept is well-proven prior to full-scale implementation. Emissions may be affected, and there is some risk of balance-of-plant effects (such as installed SCR catalyst deactivation). The process is potentially economically attractive, since catalyst could be processed in-house, and in many cases with a minimum of physical equipment modifications. However, the overall economics will depend heavily on the required permitting and the ease with which catalyst can be prepared, stored, and introduced into the boiler.

Utilization of spent catalyst in various iron/steel-making processes is not currently an attractive recycle/re-use route. There is little incentive for the iron/steel industry to utilize the material, and there is a general unfamiliarity with processing waste materials similar to spent catalyst in terms of composition. Additional significant hurdles to the process development were determined, such as limited and variable catalyst supply, presence of contaminants, potential emissions control problems, and variable spent catalyst composition.

# **7**RECOMMENDED FUTURE WORK

#### Cement Kiln Co-Processing

Cement kiln co-processing was determined to be the most mature and most viable of the technologies assessed during this study. The technology is virtually commercially ready, but it is recommended that a small "trial" batch of catalyst be processed as a means of providing additional guidance for the full-scale implementation of the technology. It is envisioned that several complete catalyst modules (potentially both honeycomb and plate) be processed as a trial "demonstration." This level of processing would provide valuable information related to contracting issues, pricing, handling and transportation requirements and costs, and processor internal procedures and technology application. At this scale, the amount of catalyst processed would not be fully representative of large-scale processing in terms of cement product quality and kiln emissions, but these parameters are relatively easily predicted and well understood. Upon completion of this trial processing, it is envisioned that the technology would be commercially ready, at which point a full-scale demonstration could take place. This full-scale demonstration could be closely tracked to further advise utilities in terms of various technology logistics and costs. The full-scale demonstration would help to further insure that no product quality or emissions issues were present.

#### Mineral Filler Applications

It is recommended that trial batches of actual products be produced associated with mineral filler applications, following the general findings from the laboratory tests. These trial tests would allow for a more definitive determination of any potential adverse effects on product quality or characteristics, such as leaching behavior. These product trials would also help to determine which products/industries would be most conducive to catalyst utilization and would help to clarify the exact route that large-scale implementation might take (i.e., consumer products versus on-site utility projects, etc.).

#### **Wet-Bottom Boiler Slag Incorporation**

The next logical step in the development of a boiler slag incorporation technology would be to perform laboratory tests which produced representative slag materials that could be evaluated for various performance characteristics, including leaching behavior, melt point temperatures, etc. These tests could then be followed by a pilot-scale demonstration where other process-related parameters were investigated. The decision to continue development would be strongly related to the utility industry's perspective on the technology, especially as related to the perceived technical and commercial liability associated with applying the technology to a full-scale commercial boiler.

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#### **Iron/Steel-Making Applications**

At the present time it is not recommended that any significant resources be devoted to the continued exploration of iron/steel-making applications as a recycle/re-use route for spent catalyst. However, a continued cursory evaluation of any emerging technologies associated with the iron/steel industry would be warranted. This would insure that any emerging technology applicable to catalyst recycle/re-use was identified.

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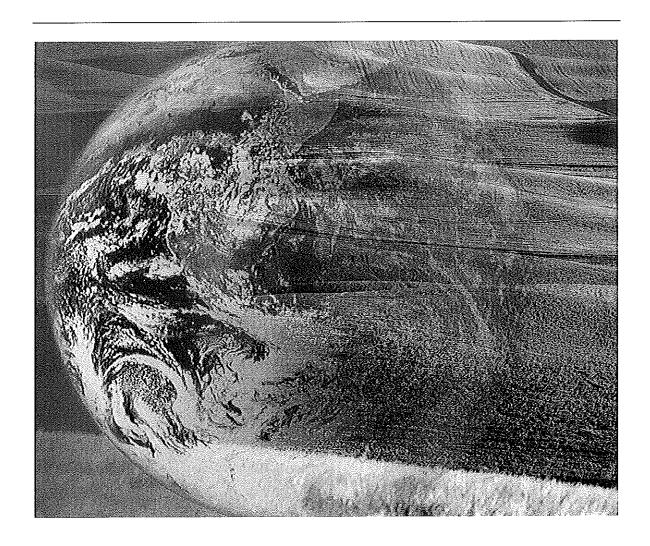
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1019710



## SCR Catalyst Disposal, Recycle, and On-Site Washing Options and Experience

#### 1015750



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### SCR Catalyst Disposal, Recycle, and On-Site Washing Options and Experience

1015750

Technical Update, December 2008

EPRI Project Manager

A. Jimenez

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#### PRODUCT DESCRIPTION

As Selective Catalytic Reduction (SCR) technology becomes more widespread and the catalyst fleet ages, cost-effective and environmentally friendly approaches are need to handle the increasing volumes of spent catalyst or extend its life through simple on-site processing. This report addresses various issues related to catalyst rejuvenation, cleaning, recycling, and disposal.

#### **Background**

As Selective Catalytic Reduction (SCR) technology becomes more widespread, and as the catalyst fleet as a whole ages, options for disposal and recycle of spent catalyst are becoming more important. It has been estimated that the spent catalyst generation rate will approach 20,000 tons/year by 2010, and 30,000 tons/year by 2020 (EPRI report 1016397). These predictions indicate that the rate of spent catalyst will be significant and activities associated with spent catalyst will become increasingly burdensome. As a result, cost-effective and environmentally friendly approaches are being sought to handle spent catalyst or extend its life through simple on-site processing.

#### **Objectives**

- To document the chemical and physical characteristics of spent catalyst
- To survey industry experience on current practices of catalyst disposal and recycling
- To evaluate options for catalyst recycling and reuse
- To investigate the technical aspects of on-site catalyst washing and gather industry experience on catalyst washing

#### Approach

The project team developed a database of spent catalyst characteristics that could be used in the evaluation of disposal and recycling options and surveyed current disposal and recycling practices, including on-site catalyst washing experience. The team evaluated options for recycling or reusing spent catalyst and made a trial study of a method to recover metals from the ceramic portion of the catalyst. Finally they summarized industry experience with catalyst washing and discussed the technical aspects of catalyst washing.

#### Results

The database of 274 spent catalyst samples compiled in the project contains information on both surface and bulk chemical analyses of principal trace constituents, common catalyst poisons, and ash-related components. It summarizes the remaining DeNO<sub>x</sub> activity and SO<sub>2</sub> conversion ability of the spent catalysts and includes information on the effects of fuel and other flue gas conditions on catalyst deactivation.

The survey of current industry practices with spent catalyst showed that nearly half of the catalyst was washed on site. Of the remaining portion, about 25% was disposed of 'as-is' in landfills while the remaining 75% of the material underwent bulk metal recovery. Ash fouling was a major factor in catalyst deactivation. The weighted average age of the catalyst at the time of removal from the reactor was 13,000 hours. Average disposal costs were approximately \$100-125/m<sup>3</sup>.

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A process developed during this project for recovering metals from the ceramic portion of spent catalysts achieved recoveries of 75% of both vanadium and tungsten. Overall, the results of the work on recycling undertaken in this project are very encouraging from both a technical and economic standpoint.

Catalyst washing shows very good results. Spent catalyst can recover from 85 to 95% of its functionality at costs of roughly \$300/m<sup>3</sup>.

#### **EPRI Perspective**

The project identified several areas where additional work would be of great benefit to the industry. In particular, further development of the process for metal recovery from the ceramic portion of spent catalyst is recommended given that the initial results are very promising and the potential benefits to the industry are significant. Further investigation into the utilization of spent SCR catalyst in cement, concrete, and flowable fill products as a recycle route for spent catalyst also appears to be warranted. Finally, since the technical level of various on-site washing processes varies greatly, it would beneficial to provide firm guidance to utilities undertaking on-site catalyst washing and to establish basic best-practice washing procedures and standards, including water quality recommendations, cleaning solution characteristics, agitation guidelines, drying procedures, and catalyst performance testing.

#### Keywords

Selective Catalytic Reduction (SCR)
Recycling
Spent
Disposal
Reconditioning
Catalyst management

#### **ABSTRACT**

Selective Catalytic Reduction (SCR) technology has been widely implemented within the fossil-fuel utility industry. The rate of spent SCR catalyst generation is increasing in proportion to the implementation of the technology and the aging of the SCR fleet. Current projections estimate that nearly 30,000 tons per year of spent catalyst will be generated by 2020. This report addresses several topics associated with spent SCR catalyst, including catalyst disposal, recycling, and on-site washing, and was prepared to help guide EPRI members in the decision-making process for the handling of spent catalyst. Report topics include: 1) spent catalyst characteristics and flue gas effects on catalyst deactivation; 2) industry experience related to catalyst disposal, recycle, and on-site washing; 3) options for catalyst recycle and re-use; and 4) on-site washing technologies and industry experience.

A database of spent catalyst characteristics was developed to aid in the evaluation of disposal and recycle options. This database of 274 spent catalyst samples contains information on both surface and bulk chemical analyses of principal trace constituents, common catalyst poisons, and ash-related components.  $DeNO_x$  activity and  $SO_2$  conversion data are also reported, and the effects of fuel and other flue gas conditions on catalyst deactivation are discussed.

The report documents industry experience based on a survey that assessed current practices related to spent catalyst disposal, recycle, and on-site washing. The survey covered the disposition of roughly 6,600 m³ of catalyst. Nearly half of this volume was washed on-site. Of the remaining portion, about 25% was disposed of 'as-is,' with no treatment prior to disposal in landfills. The remaining roughly 75% of the material underwent bulk metal recovery, and the module metal was either sold as scrap or reused. Ash fouling was noted as a major factor in catalyst deactivation. The weighted average age of the catalyst at the time of removal from the reactor was 13,000 hours. Average disposal costs were approximately \$100-125/m³.

The report evaluates the options available for the recycling and reuse of spent catalyst. The recovery of bulk metals is discussed, along with options for the reuse of the ceramic portion of the catalyst, mainly in cement, concrete, and flowable fill applications. The bulk of the effort was devoted to the recovery of metals from the ceramic portion of the catalyst, and a recycle process was developed on a trial basis. The process achieved recoveries of approximately 75% for both vanadium and tungsten, with improvement expected with process refinement. The data to date indicate that the economics of the process are highly dependent on the available levels of vanadium, tungsten, and molybdenum. Overall, the results of this recycle work are very encouraging from both a technical and economic standpoint.

The report describes the technical aspects of on-site catalyst washing and discusses industry experience with it. Overall, catalyst washing shows very good results achieving a recovery of 85-95% of original function at costs of roughly \$300/m<sup>3</sup>.

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# **1**INTRODUCTION

## **Project Purpose and Background**

As Selective Catalytic Reduction (SCR) technology becomes more widespread, and as the catalyst fleet as a whole ages, options for disposal and recycle of spent catalyst are becoming more important. In addition, techniques to prolong catalyst life associated with on-site washing and cleaning are becoming increasingly important. Over the past several years, EPRI has addressed various issues related to catalyst regeneration, rejuvenation, cleaning, recycle, and disposal. The subject report continues these efforts and focuses on the following four primary subject areas, which have been identified as issues of particular importance.

- Spent Catalyst Characteristics A database of spent catalyst characteristics was developed, which could be used to aid in the evaluation of disposal and recycle options, as well as give a nominal spent catalyst characteristics to which a specific batch of spent catalyst could be compared. Activity and SO, conversion data were also acquired.
- Industry Experience An industry survey was conducted of current disposal and/or recycle practices, which included primary deactivation mechanisms associated with the spent catalyst. On-site catalyst washing experience was also included in this survey.
- Spent Catalyst Recycle and Re-use This subject area included an evaluation of options
  for the recycle and/or re-use of spent catalyst. Included is a trial study of catalyst recycle.
  Also included is the identification of other potential recycle/re-use options that are, or may
  become, available to the industry.
- On-Site Catalyst Washing The technical aspects of on-site washing were investigated. Detailed industry experience was acquired based on information associated with several washing projects. A future task (not reportable at this time) will include a case study of onsite washing, where a full-scale washing process will be followed step-by-step to document the process in detail.

Previous work estimated that the spent catalyst generation rate would approach 20,000 tons/year by 2010, and 30,000 tons/year by 2020, as shown in Figure 1-1. These predictions indicate that the rate of spent catalyst will be significant and activities associated with spent catalyst will become increasingly burdensome. As a result, cost-effective and environmentally friendly approaches are being sought to handle spent catalyst or extend its life through simple on-site processing.

<sup>&</sup>lt;sup>1</sup> See EPRI Report 1016397, "SCR Catalyst Disposal, Recycle, and On-Site Washing/Rejuvenation Options, March 2008.

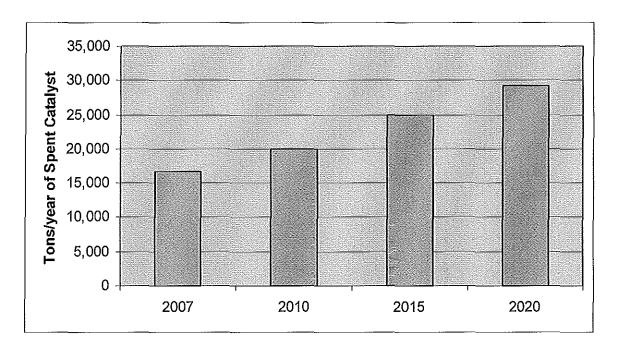


Figure 1-1
Predicted Yearly Spent Catalyst Generation Rate

# **SCR Catalyst Composition**

SCR catalysts are composed principally of a ceramic-like material which provides the necessary physical pore structure and chemical foundation for the active catalytic components of the catalysts. The ceramic-like material is made up primarily of titania (titanium dioxide, TiO<sub>2</sub>), but will include a number of additional components. In the catalyst industry, this ceramic-like material is typically called the catalyst "support." This term should not be confused, however, with gross support materials, such as metal screens and basket materials, which provide a global physical support structure to the catalyst. In addition to the screens, physical support materials such as glass fibers may be utilized.

Catalytically active components of the catalyst include vanadium, molybdenum, tungsten, and various other constituents based on the particular formulation and catalyst manufacturer. SCR catalyst is found in three general types: plate, honeycomb, and hybrid/corrugated. These terms refer to the general, physical configuration of the catalyst geometry. Even though the catalysts appear to be quite different from a geometric standpoint, the underlying ceramic portions of the catalysts are quite similar from a bulk composition standpoint. Figure 1-2 shows fouled and clean versions of these three catalyst types from top to bottom, respectively.

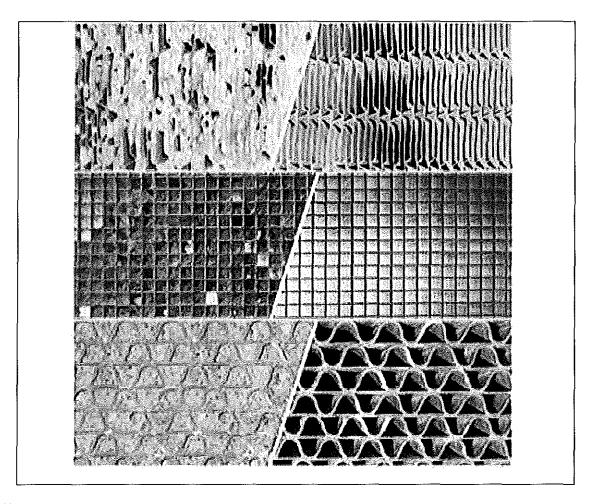


Figure 1-2
Typical Vanadium-Titanium SCR Catalysts, Various Types<sup>2</sup> Before and After Reconditioning

#### Plate Type Catalyst

For plate-type catalysts, the ceramic material is placed on a metal screen. This screen provides structural support to the plate, while the ceramic material provides the needed catalyst porosity and active catalytic component support. Due to the presence of the screen support, plate catalysts have a much larger proportion of recyclable bulk metals per unit catalyst mass than do honeycomb or corrugated catalysts. Plate catalysts will typically be heavier on a unit volume basis than their honeycomb and corrugated counterparts. Plate catalysts are manufactured by pressing the malleable, pre-fired, and clay-like ceramic onto the support screen, with subsequent firing/calcining processes used to harden the ceramic. Plate catalysts are characterized by having individual plates of catalyst which are assembled into catalyst modules. The plates are held together by compression and can be removed individually. Glass-like fibers may be added to the ceramic portion of the catalyst and used to help add strength and improve adherence to the screen materials.

<sup>&</sup>lt;sup>2</sup> Reproduced with permission; VGB, 29. Meeting of WP "PGMON" on 30.9. / 1.10. 2004 in Arnhem.

## Honeycomb Type Catalyst

Most honeycomb catalysts are considered homogeneous, since the ceramic material provides the gross physical support for the catalyst in addition to providing the needed pore structure and active catalytically component support. For most honeycomb catalysts, the chemical composition of the freshly manufactured material will be constant throughout the ceramic material. Honeycomb catalysts are typically manufactured by extruding the clay-like ceramic through a die, forming the honeycomb structure. The "logs" or "elements" of catalyst are then heat-treated, similar to other catalysts.

# Corrugated Type Catalyst

Hybrid/corrugated catalysts are formed by using a mat-like fibrous material as physical support. The ceramic material is then applied on and within this mat. Monolithic blocks having a corrugated configuration are then produced, with their physical strength being provided by a combination of both the ceramic material and the fibrous support material. These catalysts are sometimes termed "hybrid" since they have characteristics of both plate and honeycomb catalysts. Unlike true plate catalysts, however, the final bulk catalyst is not composed of individual separate plates, since in the manufacturing process a monolith is formed. This resulting monolithic structure, as well as the absence of a clearly distinguishable support screen, has similarities to honeycomb catalysts, but results in a physical appearance similar to plate.

Table 1-1 shows the typical ranges of components in the <u>ceramic portion</u> of SCR catalysts. As discussed, depending on the catalyst type, additional gross support material may also be present, such as metals from plate catalyst screen support. Each catalyst supplier will have a number of catalyst formulations designed for different flue gas applications, especially as related to the SO<sub>2</sub> conversion requirements for the particular application. Thus, the components present in any particular spent catalyst will vary greatly depending on application, catalyst manufacturer, and specific formulation. Spent catalyst will also contain a large number of trace constituents derived from contact with the flue gas, especially in coal-fired applications. In particular, low levels of arsenic, potassium, sodium, and other metals may be present on spent catalyst associated with coal firing. Fly ash particles will also adhere to the catalyst, adding to the large number of trace components present.

Table 1-1
Typical SCR Catalyst Composition – Ceramic Portion

Component (as oxide)	Concentration (wt%)
Titanium	50-100%
Vanadium	0-10%
Tungsten	0-10%
Molybdenum	0-5%
Silica	0-20%
Other Components	0-20%

# 2 SPENT CATALYST CHARACTERISTICS

# **Background**

The primary goal of this effort was to establish a database of spent catalyst characteristics using industry information which included such parameters as catalyst composition, activity, mechanism of deactivation, effects of fuel, and effects of fouling. In particular, one of the objectives was to provide guidance as to the general characteristics of spent catalyst, primarily in terms of chemical composition to aid in the determination of appropriate disposal routes and potential methods of recycle. For recycle where metal recovery was contemplated, the available metals and their concentrations were of course of primary interest. Also of interest were the effects of parameters such as fuel, flue gas and operating conditions, large-particle-ash (LPA) fouling, and ash blinding/masking on catalyst deactivation. The effort was based upon the evaluation of industry data and experience; thus, no fundamental/theoretical analyses were undertaken.

Domestic SCR catalyst users were canvassed in an attempt to gather data related to spent catalyst. As one would expect, much of this data is considered proprietary, and little, if any, specific data was made available which linked catalyst type and chemical composition to activity, SO<sub>2</sub> conversion, catalyst age, etc. This severely limited the ability to directly correlate parameters such as fuel, catalyst composition, and operating conditions to the rate of catalyst deactivation or other performance parameters, such as SO<sub>2</sub> conversion or mercury oxidation.

# **Spent Catalyst Composition and Activity**

Table 2-1 shows X-ray fluorescence (XRF) data (both bulk and surface) for 274 catalyst samples, representing a range of catalyst manufacturers, catalyst formulations, fuels, boiler types, ages, etc. These data were acquired from a firm experienced in catalyst testing; thus, a relatively large database was available. Due to the proprietary nature of the chemical composition related to particular catalyst formulations, the data are necessarily presented in a summary or composite form, However, even on a composite basis, these data provide valuable information about catalyst composition for the SCR fleet as a whole and offer a basis to which any particular catalyst can be compared. One important parameter to consider is catalyst age. The data are based upon multiple samples of various ages, not necessarily samples acquired at the end of catalyst life. Thus, a significantly aged catalyst may, on average, have levels of poisons higher than those indicated by the average values in the table. Consequently, one might reasonably expect that the maximum arsenic level indicated, for example, would correspond to an aged/spent catalyst that was applied to a high-arsenic fuel. The age parameter applies primarily to catalyst poisons, since most primary catalyst components, as present at the time of manufacturing, will not change significantly with catalyst exposure. Also note that for niobium (Nb), thallium (Tl), and barium (as BaO), the sample set is considerably smaller than 274 samples - these analytes were not always quantified. (Appendix B contains histograms of the various analytes, presenting the number of samples within the data set having a specific analyte concentration.)

Table 2-1 XRF Composition Data for 274<sup>3</sup> Catalyst Samples

Species	Sample Type	Average (%)	Standard Deviation	Maximum (%)	Minimum (%)
Titanium (TiO <sub>2</sub> )	Bulk	73.9	7.75	87.3	54.1
( *** 2/	Surface	64.8	13.3	89.8	24.9
Vanadium (V₂O₅)	Bulk	0.87	0.52	3,5	0.1
	Surface	0.85	0.55	4.3	0.22
Tungsten (WO <sub>3</sub> )	Bulk	5.26	5.39	21.0	0
(===3/	Surface	4.85	4.82	20.7	0
Molybdenum (MoO <sub>3</sub> )	Bulk	2.02	1.90	7.5	0.03
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Surface	1.61	1.52	7.3	0.03
Iron (Fe <sub>2</sub> O <sub>3</sub> )	Bulk	0.65	0.74	6.0	0.03
(* -2-3/	Surface	1.20	1.04	5.9	0.17
Silicon (SiO <sub>2</sub> )	Bulk	10.39	4.36	26	3.7
S (510 <sub>2</sub> )	Surface	13.86	7.47	49.4	1.85
Aluminum (Al <sub>2</sub> O <sub>3</sub> )	Bulk	2.63	1.75	9.1	0.6
7 Wall (7 W <sub>2</sub> O <sub>3</sub> )	Surface	4.02	2.53	13.2	0.42
Calcium (CaO)	Bulk	1.22	0.81	3.4	0.03
Outorum (Outo)	Surface	1.76	1.3	11,5	0.03
Magnesium (MgO)	Bulk	0.28	0.17	0.72	0.03
magnosium (mgo)	Surface	0.34	0.26	1.76	0.03
Barium (BaO)	Bulk	0.36	0.92	3.6	0
Banam (Bao)	Surface	0.76	1.17	3.2	0
Sodium (Na,O)	Bulk	0.19	0.22	1.64	0.01
Ocaiaiii (142 <sub>2</sub> 0)	Surface	0.30	0.26	1.69	0.03
Potassium (K,O)	Bulk	0.17	0.16	1.57	0.03
1 0100010111 (190)	Surface	0.26	0.26	2.0	0.03
Sulfur (SO <sub>3</sub> )	Bulk	1.66	0.85	5.6	0.11
	Surface	5.2	4.3	32.8	0.11
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	Bulk	0.12	0.17	1.36	0.03
1 1100p1101d3 (1 <sub>2</sub> 0 <sub>5</sub> )	Surface	0.39	0.49	2.7	0.03
Niobium (Nb)	Bulk	0.11	0.05	0.21	0.02
TRODIGITI (TAD)	Surface	0.10	0.10	0.95	0.04
	Buik	0.06	0.04	0.25	0.03
Thallium (TI)	Surface (not available)	NA	NA	NA	NA
Arsenic (As)	Bulk	7,186	6,384	26,470	10
VIODIIIO (VO)	Surface	8,352	6,217	31,085	50

<sup>&</sup>lt;sup>3</sup> Except for Nb, Tl, and Ba.

## Primary Catalyst Constituents

Certain analytes are considered primary catalyst constituents. These include the oxides of titanium, vanadium, tungsten, and molybdenum. These constituents are associated with the manufacture of the catalyst itself and are not expected to change appreciably with time. In addition, given the homogeneous nature of most SCR catalysts currently being manufactured, these constituents are expected to have relatively constant concentrations when comparing bulk and surface levels, at least when only catalyst material is considered in the analysis. For most catalyst poisons and ash constituents, surface levels will be higher than bulk levels. Thus, primary catalyst constituents may actually exhibit a slightly lower surface concentration due to the presence of ash and poisons, in effect "diluting" the concentrations of the primary catalyst constituents due to the presence of the extraneous material. In fact, all four of the primary catalyst constituents do demonstrate a slight lowering of their concentrations between the bulk and surface due to this "dilution" effect.

As expected, the catalysts are composed primarily of titania, at an average of roughly 75% by weight. The vast majority of samples contained between 75 and 85% titanium, although roughly 70 samples contained lower levels of titanium ranging from 56% to 75%, based upon the histogram data.

Vanadium levels ranged rather broadly, from virtually no vanadium to levels as high 3.5% in the bulk. This large range in vanadium is consistent with the variations in catalyst formulation utilized for different applications. For instance, very high operating temperature catalyst designs requiring low SO<sub>2</sub> conversion may utilize very little vanadium to accomplish the deNOx reaction, relying on the activity of titania and other catalytic promoters to accomplish the task. In lower temperature applications or where SO<sub>2</sub> conversion is not an issue (such as with PRB coals, very low sulfur coals, and natural gas), vanadium content may be quite high to maximize deNOx with a minimum of catalyst volume. In any event, the vast majority of samples had vanadium levels ranging from 0.5 to 1.5%, with 1% vanadium being the rough average.

Both molybdenum and tungsten ranged widely in their concentration levels. This is consistent with common catalyst manufacture where these components are utilized on a discretionary basis according to the specific catalyst formulation and intended application. Tungsten levels could range as high as 20%, but roughly one third of the samples had virtually no tungsten. Molybdenum ranged as high as 7.5%, but with nearly half of the samples containing virtually no molybdenum.

In terms of concerns over catalyst disposal or the potential for recovery of metals, these data show that individual catalyst formulations will vary widely in their constituents and may need to be evaluated on a case-by-case basis. As will be discussed in more detail in subsequent report sections, the levels of vanadium and tungsten, in particular, may dictate to a large degree the profitability of recycle for metal recovery from the ceramic portion of the catalyst. Thus, these data are extremely valuable in scoping potential recycle processes.

#### Catalyst Ash Constituents and Poisons

The majority of analytes found on exposed catalyst samples (in coal fired applications) are due to materials deposited from the flue gas. These include constituents associated with the fly ash, including fly ash particles themselves. Obviously, primary ash constituents such as iron, silicon, aluminum, and calcium (in the case of PRB fuels) will collect to some degree on the catalyst.

These constituents will typically exhibit surface enrichment, since they are associated with fly ash particles that typically do not migrate very far into the catalyst material bulk. In fact, all of the analytes shown in Table 2-1 with the exception of the primary catalyst constituents (excluding Niobium and Thallium, for which the data is limited) exhibited this surface enrichment.

#### Ash Constituents

Silicon and aluminum had the highest concentrations of all analytes (excluding the primary catalyst constituents) and demonstrated considerable surface enrichment. (Note that some catalyst formulations may include silica; thus, the levels noted may not be due solely to ash deposition.) Iron and calcium, two additional ash components, were also strongly represented. The concentrations of all of these primary ash constituents ranged broadly for the catalyst samples, likely the result of the various catalyst sample ages, reactor locations, applications, and levels of fouling. Of special interest was iron, due to its ability to affect SO<sub>2</sub> conversion especially associated with catalyst rejuvenation/regeneration and washing activities, and due to its potential adverse impact on some recycling processes that include metal recovery from the ceramic portion of the catalyst. Iron levels ranged widely, up to 6%, but most samples had iron levels of 1.25% or less. The wide range of iron levels highlights the need to evaluate catalyst iron content on a case-by-case basis if catalyst processing is being considered for which iron will have an impact.

#### Catalyst Poisons

The common catalyst poisons of sodium, potassium, magnesium, and phosphorus all showed surface enrichment, as would be expected. The levels of these constituents ranged widely, again partially as a result of the various catalyst sample ages, applications, reactor locations, and formulations. Calcium, a primary ash constituent for PRB applications and also considered a poison in these applications, ranged to above 10% on the surface, presumably as a result of application to PRB fuel. The average calcium level was quite low, however, at about 1%, reflecting the high proportion of the samples being applied to eastern bituminous fuels. Calcium level may impact catalyst recycle operations, and thus the broad range in calcium level is a consideration for recycling processes, again demonstrating the need for evaluation on a case-by-case basis.

Arsenic, of course, is of primary interest as a catalyst poison. Arsenic poisoning is the primary mode of catalyst deactivation for eastern bituminous coal applications. The data on the full suite of samples show a broad range in arsenic levels, as would be expected. The histogram shows a roughly linear decline in the number of samples having very low arsenic to samples having very high arsenic levels (up to about 26,000 ppm arsenic). The high proportion of samples having low arsenic reflects the large number of samples that were included in the analysis which had relatively short exposure times. These low-arsenic samples would not be consistent with catalyst that had been exposed to flue gas for a long period of time. This fact must be considered when evaluating the data. The range of arsenic levels is notable, with the upper limit of 26,000 ppm arsenic being extremely high. Surface enrichment of arsenic is present, but not to an extreme degree, likely denoting the ability of the gaseous arsenic to diffuse into the entire catalyst matrix.

## Catalyst deNOx and SO, Conversion Activity

K-values for both deNOx and SO<sub>2</sub> conversion were reported for the sample set as a whole (note that data for the full 274 samples was not available). The data in Figure 2-1 shows the range of deNOx K-values. The average K-value is roughly 35 m/hr, but the range is quite broad. This range reflects not only the intrinsic K-value range of the catalyst as manufactured, but also various sample ages and test conditions. It is important to note that evaluating specific catalyst offerings on a K-value basis alone is not a valid evaluation basis, since catalyst volume, pitch, geometric configuration, etc., all play fundamental roles in the catalyst performance. The data, as presented, simply offer a basis for examining the range of K-values that may be encountered. These data can be used to determine where a specific catalyst sample's K-value lies within the range of industry experience. In practical applications, the relative K-value (K/Ko) is of most interest, since it reveals the decline in activity for the application of interest, and thus the decrease in deNOx potential of the catalyst compared to that of new can be determined.

Figure 2-2 shows the histogram for  $SO_2$  conversion. These data indicate that the vast majority of samples had an  $SO_2$  conversion of less than 1%, as would be expected for coal fired applications. Approximately one third of the samples had  $SO_2$  conversions of 0.4% or less, denoting the industry trend toward lowered  $SO_2$  conversions. A few samples showed unusually high  $SO_2$  conversions – these are likely catalyst applied to low-sulfur fuel oils or gas, where  $SO_2$  conversion is not an issue.

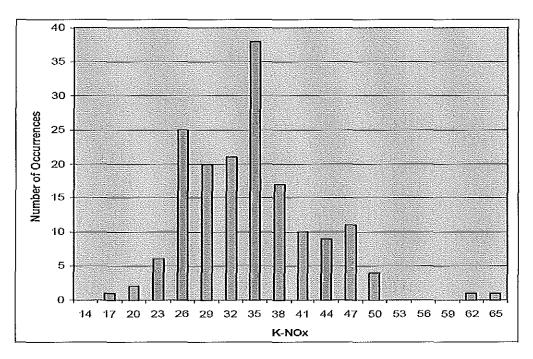


Figure 2-1 Histogram of deNOx K-value (m/hr)

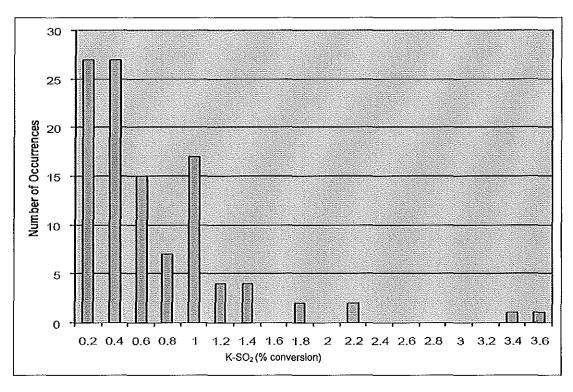


Figure 2-2 Histogram of SO, Conversion

# Effects of Fuel, Flue Gas Composition, and Fouling on Catalyst Performance

The theoretical effect of various parameters such as fuel, flue gas composition, ash composition, fouling rate, etc. on SCR catalyst deactivation and general performance are well known and have been the subject of numerous studies over the years. The current work hoped to add some insight into the current industry experience with respect to these parameters based upon directly reported industry experience. However, given the proprietary nature of specific catalyst parameters such as chemical composition, activity, etc., very little information directly relating various parameters to catalyst specifics was available. It did become clear from the analysis that the rate of deactivation of any particular catalyst, as well as problems associated with ash fouling, etc., was strongly a function of the fuel and operating parameters of the SCR and was less a function of the catalyst composition and type. In any event, the following discussions relate some of the general industry knowledge from years of experience with respect to the effect of fuel on catalyst deactivation, and deactivation effects related to LPA and routine ash fouling, masking, and blinding. In addition, some brief discussions are given with respect to fuel and flue gas parameters on SO<sub>2</sub> conversion and mercury oxidation.

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#### Effect of Fuel on Catalyst Deactivation

The fuel associated with any particular SCR application will govern, to a large degree, the design of the catalyst. The fuel will of course determine the primary deactivation mechanism, the ash loading and characteristics, the flue gas composition, and, to a significant degree, the potential for fouling. As such, fuel is probably the most important global design parameter that must be addressed with any specific catalyst design.

Typically, fuels are divided into two primary classes, based upon their primary mode of deactivation of SCR catalysts. These are: 1) PRB coals, where deactivation is primarily a function of calcium sulfate masking/poisoning and 2) eastern bituminous coals, where deactivation is typically a function of arsenic poisoning. In both cases, physical fouling issues may override issues associated with classic calcium sulfate or arsenic poisoning. These physical issues include phenomenon such as LPA fouling, which can produce severe loss of functionality of the catalyst very quickly. Thus, for any particular installation, the deactivation mechanisms that actually govern will be highly site specific.

#### PRB Coal - Calcium Sulfate Poisoning

In the absence of severe fouling or operational issues, the long-term deactivation mechanism for catalysts applied to PRB-fired units is by calcium sulfate poisoning, sometime termed "PRB poisoning" or simply "calcium poisoning." The deactivation mechanism follows a pathway where CaO attaches to the catalyst surface. The attachment is dependent on the availability and the adhesion level of the CaO. Once attached, SO<sub>3</sub> in the flue gas reacts with the CaO forming calcium sulfate (CaSO<sub>4</sub>). The continued formation of calcium sulfate results in the blocking of catalyst surfaces and pores, which limits the ability of NOx and NH<sub>3</sub> to diffuse into the catalyst and reach active sites, thereby limiting NOx reduction. The term often used for calcium sulfate deposits that prevent diffusion is "masking." However, it should be noted that this masking not only may occur as a macro-fouling layer, but also as a microscopically thin masking layer deep within the pores of the catalyst. A schematic of this deactivation mechanism is shown below in Figure 2-3.

<sup>&</sup>lt;sup>4</sup> Calcium sulfate also expands upon formation which exacerbates the blockage of pores.

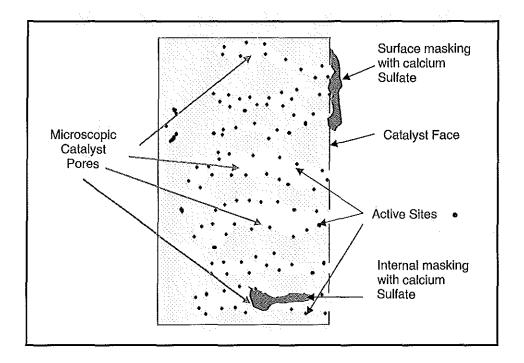


Figure 2-3
Diagram of Calcium Sulfate Masking Mechanism

Many factors affect the rate of deactivation associated with PRB coals, and an evaluation of the expected deactivation rate for any specific installation must include such parameters as: specific catalyst formulation, physical design, and volume; fuel characteristics; unit operational parameters; sootblowing; etc. Generally though, the higher the CaO level in the ash/fuel, the higher the rate of deactivation. (This holds only for units firing a high proportion of PRB coal – as discussed below, increased CaO levels, up to a point, may be beneficial with eastern bituminous fuels.)

#### Eastern Bituminous Fuels - Arsenic Poisoning

In the absence of severe fouling or operational issues, arsenic poisoning is the primary deactivation mechanism for eastern bituminous fuels. Gaseous arsenic in the flue gas chemically attacks active vanadium sites, forming a bond which renders the active vanadium site incapable of promoting the deNOx reaction. This deactivation mechanism differs from calcium sulfate masking because there is no aspect of diffusion limitation; the active sites are simply rendered inactive. Thus, a catalyst that has become poisoned with arsenic may exhibit physical characteristics very close to that of the fresh, but have a severely limited ability to promote the deNOx reaction. The absolute level of arsenic in the fuel is often considered the controlling factor in the rate of arsenic poisoning (for a given catalyst and installation design), but a more applicable parameter is the arsenic-calcium ratio. This is due to the fact that CaO acts as a scavenger for free arsenic. This scavenging effect by calcium helps to reduce the reactive arsenic in the flue gas that would otherwise be available to poison the catalyst. Thus, eastern bituminous

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fuels with both high arsenic and calcium will not deactivate catalyst as fast as fuel counterparts which hive high arsenic, but lower levels of calcium. The addition of limestone, to artificially boost fuel calcium levels, has of course been used to mitigate arsenic poisoning in fuels having excessive levels of arsenic. This scheme capitalizes on the ability of the CaO to scavenge the arsenic.

Figure 2-4 shows the effect of calcium and arsenic in the fuel on catalyst life (deactivation rate). The plot has regimes that cover cases consistent with eastern bituminous fuels, where arsenic poisoning governs deactivation, as well as cases consistent with PRB fuels, where calcium sulfate masking governs deactivation. (It is cautioned that this is an example plot for demonstration purposes as to the general effects of calcium and arsenic. The exact nature of similar plots for a particular installation will be site specific.) Looking at the lower half of the plot, one can see that for a given level of arsenic, higher calcium levels improve the life of the catalyst. This occurs roughly up to a value of 0.6% CaO in the fuel and reflects the scavenging effect of CaO on arsenic. As CaO in the fuel continues to increase (in roughly the upper half of the plot), catalyst life begins to decline due to the predominance of deactivation associated with calcium sulfate masking, consistent with a PRB fuel. The plot clearly demonstrates that there is an optimal ratio of calcium to arsenic, which results in maximum catalyst life. Interestingly, if the calcium level is held constant, increases in arsenic always lead to diminished catalyst life, irrespective of which regime the catalyst is actually operating in. This is somewhat academic though, as most PRB coals have such a high level of calcium as to make the contribution from arsenic poisoning almost negligible. The expected life of any catalyst installation is strongly case specific, and thus life evaluations must be made with specific installation parameters in mind, including catalyst formulation and operating conditions. Catalyst suppliers are adept at determining these expected life calculations and are the best source for accurately determining the effects that a particular fuel will have on catalyst life.

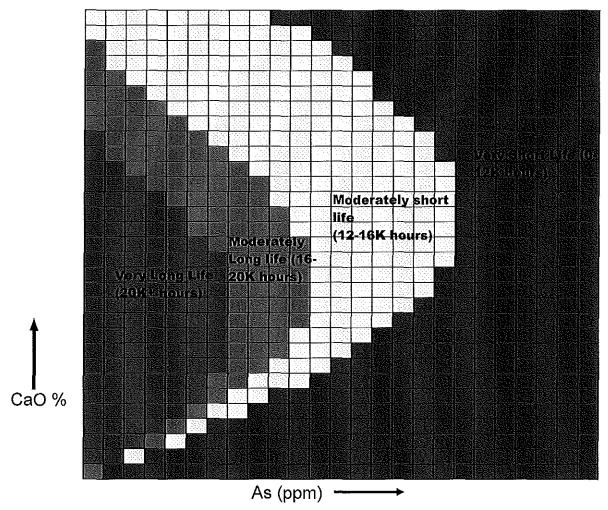


Figure 2-4
Effect of Calcium and Arsenic on Catalyst Life (General Effect)

#### Effect of Fouling on Catalyst Deactivation

Based upon the current industry experience, especially as related to information obtained directly from EPRI members in association with this report, catalyst fouling appears to be a major source of catalyst deactivation, second only to the classic deactivation mechanisms of arsenic poisoning and calcium sulfate masking. As will be discussed in more detail in subsequent sections, fouling was a controlling or major factor in catalyst deactivation associated with many of the catalyst disposal and washing activities reported. No data were available linking specific catalyst designs, formulations, etc. to fouling behavior, so the following discussions are necessarily general in nature.

#### Large-Particle-Ash Fouling

Fouling with LPA produced some cases where loss of catalyst functionality was catastrophic and rapid. These severe cases required immediate attention to allow the catalyst to operate, at least on a marginal basis, until more permanent corrections could be made. LPA fouling occurs due to

very large "popcorn" or agglomerated ash particles being formed in the boiler or upstream of the SCR. These particles are much too large to pass through the catalyst channels, and as a result, completely mask the face of the catalyst, or the protective screens above the catalyst beds. This results in severe loss of flow through areas of the catalysts. Areas that are clear will see much higher velocities, and erosion may be a problem over extended operational periods. LPA fouling may be temporarily corrected to some degree by mechanically cleaning the catalyst in-situ with dry cleaning methods. Ex-situ washing (as reported in subsequent sections) provides a more thorough treatment of the catalyst, often restoring the catalyst to near new condition. However, these activities do not address the fundamental problem of LPA reaching the reactor. To address LPA reaching the reactor, most utilities have opted for a "screen" installation which can capture and remove LPA from the flue gas path prior to it reaching the reactor. Various schemes have been utilized to continuously remove the LPA that is captured, with varying degrees of success. Overall within the industry, LPA fouling has been a major, but manageable, issue. Additional information on LPA mitigation methods can be found in EPRI Report 1014253.

All catalyst types and physical configurations have the potential to be adversely affected by LPA. Very large ash particles would be unable to pass through the catalyst channels, no matter their size, and thus LPA is an issue with catalysts across the board. For any given installation with LPA ash problems, different catalysts may behave somewhat differently, especially as a function of their catalyst pitch. However, these differences are highly case specific and no global guidelines can be given as to particular catalyst designs and physical configurations that would offer firm guidance. Intuitively, one might conclude that larger pitched catalysts are necessarily better than smaller pitched counterparts for a given installation with LPA problems. This may not be the case, however, since as pitch increases there may be more opportunity for LPA to enter the channels causing internal fouling than smaller pitched catalysts where the LPA simply blocks the channel face. In this case, the smaller pitched catalyst may respond to simple dry cleaning, while the larger pitched catalyst would require more aggressive treatment to clear the internal blockages. This is only one hypothetical example, but it demonstrates the potential complexity of the issue. One lesson learned from the industry experience is that if the LPA problem is detected prior to reactor, ductwork, and catalyst design, the issue can be addressed up-front, limiting operational difficulties and costs.

#### Long-Term Ash Fouling

Even in the absence of LPA, ash build-up is of course a primary concern in the design of catalysts, reactors, ductwork, and sootblowing/sonic horn systems. This has been a long-standing design issue for SCR technology in general, and the industry has made great headway in mitigating adverse effects due to general ash fouling. Even so, it is not uncommon for particular areas of catalyst associated with specific SCR installations to have fouling issues. As in the case of LPA, these general fouling issues are highly case specific and no general guidance can be given over the standard industry practices currently in place.

The behavior of the fly ash, primarily as a function of fuel type, will play a major role in the tendency for fouling to occur. Ash characteristics differ in particular between PRB and eastern bituminous coal, with PRB ash often being thought of as "sticky" due to its propensity to bridge, etc. Table 2-2 shows some of the differences between PRB and eastern bituminous coal ash in terms of ash particle size. Note the high proportion of particles under 10 microns in the PRB ash. As a result of the differences in eastern bituminous and PRB coal ash, the catalyst and sootblowing/sonic horn systems will be designed for the expected fuel type.

Table 2-2
Typical Ash Size Distributions Based on Coal Type<sup>5</sup>

Ash Size	Typical PRB Coal	Typical Bit. Coal
> 38 µm	15%	10%
10 – 38 μm	30%	80%
< 10 μm	55%	10%

The actual mechanism of deactivation of fouling with fly ash differs between individual installations, but in all cases the mechanism is considered physical. Macro-fouling may be experienced, which is typified by large "mounds" of ash being present, especially at the front side or entrance to the first catalyst layer. The ash may simply bridge over the catalyst face, thereby blocking the channels only at their entrances, or the ash may deposit deep within the channels making cleaning much more difficult.

Random blockage of channels may occur due to bridging of individual channels with fine fly ash, or due to larger particles becoming wedged in the channel, resulting in the channel filling with ash above the obstruction. This type of fouling may be localized at the catalyst surface, or it may occur deep within the channels. Thus the ease with which it can be removed will vary greatly. This type of random blockage may be due to higher than expected ash loadings due to the firing of high-ash fuels outside of the original design criteria.

In most cases, increasing catalyst pitch will help with long-term fouling, especially random fouling of channels. However, in cases where severe maldistributions are causing entire sections of the catalyst face to foul, increased catalyst pitch does not necessarily solve the issue.

# Fuel and Flue Gas Effects on SO, Conversion and Mercury Oxidation

The SO<sub>2</sub> conversion for any particular catalyst formulation is strongly a function of the detailed design of the catalyst, including chemical composition. Catalyst manufacturers must strike a balance between adequate deNOx activity and acceptable SO<sub>2</sub> conversion. Without the restrictions on SO<sub>2</sub> conversion, catalysts can be designed with extremely high deNOx activity. Parameters affecting the relationship of SO<sub>2</sub> conversion and deNOx activity include commonly recognized parameters such as vanadium content. However, the actual behavior of the catalyst with respect to SO<sub>2</sub> conversion and deNOx is an extremely complicated blend of effects including, porosity, surface area, pore size distribution, catalyst tortuosity, dispersion of active catalytic species, and catalyst geometry. Thus, attempting to correlate any one catalyst parameter to SO<sub>2</sub> conversion will not typically produce meaningful results.

Unlike deNOx activity, where significant deactivation occurs over time,  $SO_2$  conversion is relatively constant over any particular catalyst's life. In addition, the percentage of  $SO_2$  converted for any particular catalyst installation is relatively constant with respect to flue gas conditions. Oxygen and moisture levels can theoretically affect  $SO_2$  conversion, but this rarely occurs under

<sup>&</sup>lt;sup>5</sup> Based upon data given in: Morita, I., and Franklin, H., "Recent Experience with Selective Catalytic Reduction on Powder River Basin Coal and Petroleum Coke," paper, Electric Power 2002 Conference, March 19-21, 2002, Hitachi America, Ltd., Tarrytown, NY.

normal boiler operating conditions to any significant degree. One notable exception to the previous statements is the case of fuels having high vanadium content. Some fuels, such as residual fuel oil or petroleum coke, may have appreciable vanadium levels. The resulting vanadium in the flue gas can deposit on the catalyst over time, resulting in an increase in SO<sub>2</sub> conversion. Interestingly, a commensurate improvement in deNOx capability is not typically noted. SO<sub>2</sub> conversion varies almost directly proportional to reactor flow rate. With respect to temperature, however, SO<sub>2</sub> conversion is quite sensitive and under some temperature ranges, SO<sub>2</sub> conversion may behave with exponential increases to increasing temperature. Catalyst manufacturers will typically provide the end-user with performance curves showing the relationship of SO<sub>2</sub> conversion to parameters such as flow rate and temperature. These curves are specific to the installation.

SO<sub>2</sub> conversion is known to be potentially affected by catalyst washing. This is due primarily to the relationship of iron and SO<sub>2</sub> conversion. Iron oxide is a relatively strong catalytic species for SO<sub>2</sub> conversion. During washing, iron species may be solubilized and mobilized. If the washing is not conducted properly, the solubilized iron will remain on the internal surface area of the catalyst and may be available for the conversion of SO<sub>2</sub>. As a result, an improperly washed catalyst may exhibit much higher SO<sub>2</sub> conversion characteristics than its fresh counterpart. It is also important to note that washed catalyst may exhibit a quite large variability from sample to sample with respect to SO<sub>2</sub> conversion as a result of the washing procedures or the exposure conditions of particular sections of catalyst. Consequently, it is cautioned that for washed catalyst, a number of samples should be utilized to establish the SO<sub>2</sub> oxidation characteristics of the final product.

Mercury oxidation, as opposed to SO<sub>2</sub> conversion, is strongly affected by flue gas and fuel characteristics. The exact catalyst mechanism of mercury ideation is not well understood, and catalyst manufacturers are in the process of elucidating the relationship of mercury oxidation, deNOx activity, and SO<sub>2</sub> conversion, with respect to catalyst design. Increasing temperature has an adverse affect on mercury oxidation, but the exact nature of this effect will be site specific. Similarly, increased flow rate reduces mercury oxidation, again with the exact effects being site specific. Perhaps the most important parameters affecting mercury oxidation are flue gas halogens. Chlorine and bromine, in particular, are known to strongly affect mercury oxidation. These effects are the subject of numerous completed and on-going studies. The exact relationship between halogen level and mercury oxidation is site specific, but in general high halogen levels improve mercury oxidation dramatically (up to some maximum level), compared with conditions of very low halogen level. This has important implications for low halogen fuels, such as PRB coal. An ongoing EPRI project is evaluating the effects of flue gas parameters on different catalyst types. The project is being conducted at Gulf Power's Mercury Research Center, a 5 MW equivalent pilot plant. Results can be found in EPRI report 1018072.

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# 3 INDUSTRY EXPERIENCE

## **Background**

One of the goals of the subject effort was to perform an evaluation of the current industry common practices and experience associated with the disposal, recycle, and on-site washing of spent SCR catalysts. This effort utilized an industry survey to establish the experience base and included such items as catalyst volume, application, mode of deactivation, catalyst age, etc. (Note that a subsequent report section reports the on-site washing procedures, effectiveness, etc., in detail.) The survey data were acquired by posing a questionnaire to EPRI participating utility members. Also included in this survey were requests for catalyst chemical data, although very little information was obtained directly related to catalyst composition due to proprietary concerns.

#### Results

Table 3-1 shows a summary of the survey results. Activities associated with roughly 6,600 m³ of catalyst are reported. The table shows the proportion of catalyst subject to certain parameters, but it should be cautioned that the proportions do not necessarily apply to the entire domestic experience base as a whole – they are necessarily limited to the survey respondents, and thus may be skewed. In particular, roughly half of the reported experience in terms of catalyst volume was associated with on-site washing, which is likely a non-representatively large proportion of the industry experience as a whole. In other words, the data are thought to be heavily skewed toward on-site washing, and one should not assume that on-site washing is as widespread as the data might indicate. In any event, the data do offer a good assessment of the activities that are common in the industry associated with spent catalysts. The survey details on a project by project basis are shown in Appendix A.

<sup>&</sup>lt;sup>6</sup> Not included in the reported data is 1,053 m<sup>3</sup> of catalyst which was sold to an off-site regeneration firm for subsequent regeneration and sale. Also note that the survey was limited to disposal, recycle, and on-site washing activities – off-site regeneration was not included in this study, although some experience was reported.

Table 3-1 Summary of Survey Data

Parameter	Volume of Catalyst (m³)	Proportion
Total volume of catalyst in survey	6,601	
Volume washed on-site	3,090	47%
Catalyst Disposed (with or without bulk metal recovery)	3,511	53%
Disposed catalyst that disposed of modules as-is	794	23%
Disposed catalyst that included bulk metal recovery	2,717	77%
Disposed catalyst that included crushing of ceramic portion when bulk metals were recovered	2717	100%
Volume of disposed catalyst utilizing on-site landfill	989	28%
Volume of disposed catalyst utilizing off-site landfill	2,522	72%
Catalyst that deactivated due to ash fouling (controlling or major reason for action)	6,081	92%
PRB application	4,043	61%
Eastern Bituminous application	1,943	29%
Blended fuel application	6,15	9%
Honeycomb type catalyst	5,974	91%
Plate type catalyst	627	9%
Catalyst Reaching (or near) design life	4,629	70%
Weighted average age of catalyst at time of removal	13,00	0 hrs
Disposal cost	\$100-125 per m³	
On-Site washing cost	\$300 per m³	
On-Site washing effectiveness	85-95% functionality recovery	

#### Disposal and Recycle Activities

The data in Table 3-1 show the disposal and recycle activities associated with 3,090 m³ of catalyst. Of this volume, 23% was disposed of as-is, i.e., the entire modules were disposed of basically as removed from the reactor. Thus, the proportion of catalyst for which bulk metal recovery (module superstructure) occurred was very high, at 77%. This is an encouraging rate of recycle of the bulk metal and tends to highlight the ease with which this type of recycle can be performed. Of the catalyst for which the bulk metals were recovered, all was crushed in some manner to reduce volume. This pre-disposal activity minimizes landfill volume.

The survey responses noted that some of the module steel was re-used as-is for new catalyst modules. The proportion of catalyst module steel re-used in this manner was quite small, although the exact amount was not determined. The majority of the recovered bulk module steel was simply sold for scrap.

The survey data indicate that roughly half the catalyst disposed (28%) utilized an on-site landfill, while the remainder used off-site facilities. None of the catalyst included in the survey was deemed to be a hazardous waste, although in one instance, a hazardous waste landfill was utilized for convenience purposes only.

In no case was the ceramic portion of the catalyst recycled. The recycle of this ceramic portion is one of the focuses of the current study and will be discussed in detail in a subsequent report section. The survey results highlight the limited availability of recycling scenarios for the ceramic portion and demonstrate that in all cases, some sort of disposal was included regardless of what recycle activities took place.

#### Catalyst Type, Fuels, and Deactivation Mechanisms

Honeycomb type catalyst was overwhelmingly represented in the survey (91%). It is unclear if this proportion is a skewed value, as a result of a non-representative survey reporting, or if this accurately reflects the industry experience as a whole. Although, given the wide-spread application of both plate and honeycomb materials, one might intuitively conclude plate catalyst disposal is poorly represented in the survey. Given the very small proportion of plate catalyst included in the survey, the reader is cautioned against applying the reported experience conclusively to plate catalysts, since decisions on operations such as bulk metal recovery, catalyst crushing, etc., may have different drivers.

PRB coal applications constituted roughly two-thirds (61%) of the experience base in terms of catalyst volume, while blended fuel (PRB and eastern bituminous) accounted for 9%. The remainder (29%) was associated with the firing of eastern bituminous fuel. These data include a relatively large portion of catalyst which was washed on site (47%) – roughly 75% of this washed catalyst was associated with PRB applications. If the washed catalyst is excluded from the calculation, leaving only catalyst that was disposed/recycled, then only 50% of the disposed/recycled catalyst was applied to PRB applications, 18% to blended fuel, and 33% to eastern bituminous fuel.

Severe fouling, often with LPA was a primary deactivation mechanism. In fact, fouling was either the primary reason, or a major contributor, to the decision to take action in almost all of the catalyst (92%) included in the survey. This reflects the bout of difficulties the industry has experienced with LPA ash. It is unclear if this deactivation proportion is representative of the industry as whole, but in any event, catalyst being retired due to catastrophic fouling is expected to decrease as problematic units are identified and mitigation steps are taken. Fouling was listed as a primary or major contributor to deactivation in all of the PRB and blended coal units. For the eastern bituminous units, fouling was a controlling or major contributor in 80% of the catalyst included in the survey, by volume.

A catalyst life guarantee of 16,000 hours appears to be quite standard with 80% of the catalyst in the survey being designed for this life. The remaining 20% of catalyst had a life design of 24,000 hours. Interestingly, although fouling was a major factor in almost all cases, two thirds of the catalyst (70%) nearly reached, reached, or exceeded its design life. The average age of the catalyst at the time of removal from the reactor was roughly 13,000 hours (weighted for volume).

Overall, the survey produced some interesting findings – some of the more important points are highlighted below.

Roughly one half of catalyst in survey was washed on site. The proportion of catalyst washed
on-site for the industry as a whole is not expected to be that high, thus the data is thought to
be skewed in this respect. All washed catalyst was honeycomb type deactivated on PRB fuel.

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- The majority of catalyst (77%) disposed of included bulk metal recovery to utilize the basket material as scrap or re-use the baskets for new catalyst.
- All catalyst in the survey was crushed if bulk metal was recovered.
- Fouling was a controlling or major factor in catalyst deactivation in the vast majority of cases, although much of the catalyst reached its intended life.
- Slightly over half of the catalyst was applied to PRB coals (61%), with the remaining applied to eastern bituminous or blended coals.
- The vast majority of catalyst was honeycomb.
- No actual recycling of ceramic portion of catalyst occurred.
- All catalyst was disposed of as non-hazardous waste, although a hazardous waste landfill was utilized for convenience in some cases.
- Both off-site and on-site landfills were utilized, although most catalyst was sent off-site.



# SPENT CATALYST RECYCLE AND RE-USE

#### **Introduction and Other Industry Experience**

As more and more spent SCR catalyst is being generated, the industry has become increasingly interested in options for recycling or re-using this spent catalyst. As discussed previously, the spent catalyst generation rate is expected to reach 20,000 tons/year by 2010, and options which minimize both the economic and environmental impact of this spent catalyst are of interest. In terms of total volume/mass of material, spent SCR catalyst is quite small compared to other industry waste streams such as bottom ash, fly ash, and scrubber waste. In addition, the SCR catalyst waste stream is small compared to other U.S. industrial catalyst wastes, such as refining and pertrochemical catalyst wastes, which are orders of magnitude larger. For instance, worldwide basic crude oil refining catalyst waste production is on the order of 2 million tons/year. These comparative volume figures are not presented to minimize the impact related to spent SCR catalyst, but are offered as a perspective to other industries dealing with similar issues. In some ways, the approaches and lessons learned by other industries generating catalyst wastes can be used as a guideline/roadmap for the development of methods to handle spent SCR catalyst.

In general, all spent solid catalyst, including SCR catalysts, have the same potential life cycle as shown in Figure 4-1. Disposal would typically occur only after options for regeneration/rejuvenation, washing, re-use as-is in another application, or recycle have been examined. One unusual aspect of SCR catalyst is the presence of a bulk metal superstructure associated with the catalyst modules. The presence of this bulk metal differs from most other industrial catalysts, and adds to the number of recycle options, since bulk metal may be recovered or re-used leaving the catalyst itself as a separate waste stream. This produces the possibility of "hybrid" recycle/disposal scenario where a portion of the bulk catalyst is recycled (the module superstructure), and a portion is disposed.

<sup>&</sup>lt;sup>7</sup> Based upon data from Gavrila, Lucan, "Recovery of Metals from Spent Catalysts, 1. Catalyst Management and Spent Catalysts Sources," MOCM 12 – Volume 1 – Romanian Sciences Academy, 2006.

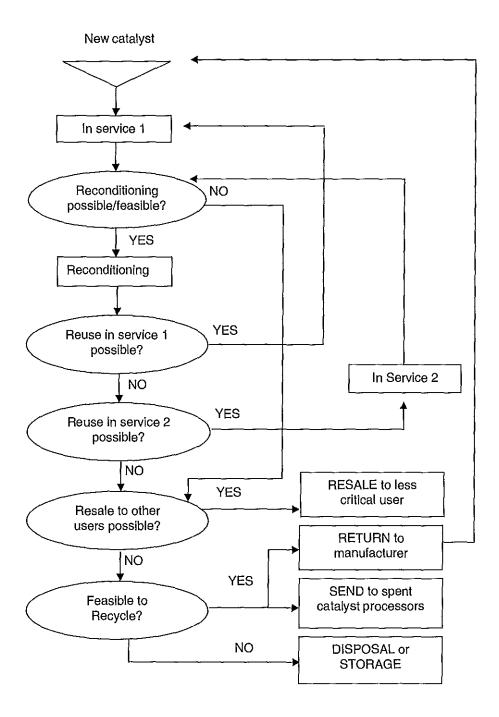


Figure 4-1 Basic Catalyst Life Cycle

Catalyst recycle and re-use can be divided into a number of general categories. The assignment of various activities to either "recycle" or "re-use" is somewhat arbitrary, but as presented in Table 4-1, the assignments as they are utilized in this report. The options are discussed in detail, below.

Table 4-1
General Recycle and Re-Use Options for SCR Catalyst

Recycle	Re-Use
Recovery of Bulk Metals for Scrap	Re-use of module frame for new catalyst
Use of ceramic portion without chemical processing (concrete/cement applications, aggregate, filler, etc.)	Use of catalyst as-is in another SCR application
Use of ceramic portion with chemical processing – metals recovery	Raw material feed for new catalyst manufacture

## **Recovery of Bulk Metals**

As evidenced by the survey results, the recovery of bulk metal module materials is common. The survey showed that the metal module superstructure was recovered in some manner in 77% of the catalyst volume, prior to the disposal of the ceramic portion of the catalysts. The primary utilization routes of the recovered bulk metal were either the sale of the metal for scrap, or the reuse of the module superstructure for new catalysts. Note that the modules could be used by the utility that originally produced the spent catalyst, or the catalyst supplier could re-use the modules for an alternate customer. It appears that re-use of the modules for catalyst being prepared for the utility originally producing the spent catalyst is most common. Also note that due to differences in module construction and specifications, modules would typically be re-used only by the manufacturer that produced them originally.

The recovery of bulk metals is a straightforward process and can typically be performed by general site contractors with no special expertise. In the case of recovery for scrap, the module superstructure can be cut as needed to facilitate disassembly. If the module is being preserved for replacement with fresh catalyst, more care is necessary to insure that the module integrity is maintained. In any event, the processing can be done in a lay-down area or warehouse, and modules are often placed on their side for easy access. Routine catalyst handling procedures are typically followed when handling the spent catalyst.

In the case of plate catalyst, two additional sources of bulk metal are available: 1) the sheet-metal sheathing associated with the individual catalyst "blocks" and 2) the metallic support screens associated with the individual catalyst plates. Plate-type catalyst modules are typically constructed using two layers of catalyst blocks. The blocks are usually roughly 18" square, with a typical catalyst module (1m x 2m) containing two layers of these blocks, with 8 blocks per layer for a total of 16 blocks. The catalyst blocks are sheathed in carbon steel, which can be sold as scrap, if recovered. In most cases the individual catalyst plates within the catalyst blocks are constructed with stainless steel mesh/screen to which the actual ceramic catalyst material is

adhered. This stainless screen may have significant value, but the process to recover this metal is more complicated than is the recovery of the bulk module steel. To recover the screen steel, the entire catalyst module must be disassembled, such that individual catalyst plates can be obtained. These plates are then crushed or ground to physically remove the adhered ceramic. The recovered screens can then be sold as stainless scrap, and the catalyst itself would be handled similar to crushed honeycomb logs, since they now contain only ceramic catalyst material. Note that this screen recovery process results in significant volume reduction compared to the original catalyst block, and may therefore produce advantages in transport and disposal. Note that if the catalyst screens are being recovered, then the catalyst block sheathing material will be recovered as a matter of course. In cases where screen recovery is not contemplated, the dismantling of the blocks simply to recover the sheathing metal would not likely be cost effective.

Table 4-2 gives a general guideline as to the ceramic and metal proportions of various catalyst types. This table should only be used as a general guideline – the catalyst manufacturer can give more definitive information for specific catalyst formulations and module designs.

Table 4-2
Approximate Metal/Catalyst Weight Fractions for General Catalyst Types

Catalyst Type	Bulk Module Metal Fraction	Screen/Support Metal Fraction (SST)	Ceramic Catalyst Fraction
Honeycomb	40%	NA	60%
Hybrid/Corrugated	10%	NA	90%
Plate	33%	33%	33%

#### Use of Ceramic Material without Chemical Processing

One option for avoiding catalyst disposal is to utilize the ceramic portion of the catalyst in some commercial or industrial application. This option assumes that bulk metals have been removed from the catalyst, leaving only ceramic material. The utilization of the catalyst in this option focuses on the use of the ceramic virtually as-is, with no chemical processing, etc., although physical preparation such as grinding/pulverizing may be required, depending on the utilizing process.

Spent alumina-based catalyst (common to petroleum refining and chemical production) has been utilized in a number of applications with variable success. These potential uses include cement replacement/augmentation, flowable fill and concrete applications, use as synthetic aggregate, glass-ceramic material production, and refractory production. All of these utilization options are potentially applicable to titania-based SCR catalysts. However, two overriding factors must be considered. First, the actual value of the spent catalyst material utilized in these ways is not great. In other words, the raw materials typically used for these applications are not high-value materials, thus the offsetting costs associated with utilizing spent catalyst to replace these materials is not particularly large. Second, there is a perceived liability, both technically and environmentally, in using spent SCR catalyst for the proposed applications without fully understanding the behavior and impacts that the spent catalyst will have on the utilizing process and the final products. Specifically, spent SCR catalyst contains many contaminants associated with the flue gas, arsenic in particular. These components may have adverse impacts on the

production and utilization of products. Given the relatively small economic incentive for using spent catalyst, the liabilities and process implementation costs may outweigh the benefits.

Notwithstanding the above concerns, it appears that the utilization of spent SCR catalyst in cement/concrete applications (including flowable fill) is relatively attractive. There are several reasons for this. First, if no high-temperature processing is involved which could potentially volatilize contaminants, this would minimize adverse impacts. For instance, if the spent catalyst was used as a direct replacement for cement or aggregate, then most common concrete applications would not involve temperatures that would promote volatilization. This of course precludes the use of the catalyst during the initial manufacture of the cement itself, where raw materials are fired at high temperatures in cement kilns. In addition, refractory applications would also be precluded, since by nature they are high-temperature applications and may involve high-temperature processing; thus volatilization of contaminants may occur. Second, the utility industry has a close working relationship, and in many cases intimate knowledge of, the cement/concrete industry, since fly ash is already utilized in a similar manner. This familiarity between the two industries would likely be helpful in implementing a cement/concrete utilization route for the spent SCR catalyst. And third, the cement/concrete industry is a large and widespread industry. Thus the volume of spent SCR catalyst produced is minute compared to the volume of cement/concrete that is produced in the U.S. Even if spent catalyst was included in a small portion of the cement/concrete produced, even at a very small proportion to the other materials used, this utilization route could easily handle the expected volumes of spent SCR catalyst generated by the utility industry. For these reasons, cement/concrete manufacture is the focus of subsequent discussions associated with the utilization of spent SCR catalysts when chemical processing is not contemplated.

#### Cement/Concrete/Flowable Fill Manufacture

A number of research projects have investigated the use of spent industrial catalyst in conjunction with the manufacture of cement/concrete. These studies have focused on industrial catalysts which are comprised primarily of alumina and silica, and thus the results may not be directly applicable to titania SCR catalyst. In any event, the studies have shown the basic feasibility of using these spent industrial catalysts for cement/concrete applications. Environmentally related parameters, such as metal leaching, also appear to be acceptable with these applications, based upon the bulk of the data. Although these results are encouraging, one must be cautious in applying these results too strictly to spent SCR catalysts. In particular, titania may have a very different behavior compared to alumina and silica, especially where pozzolanic activity is concerned. Also, the presence of alternate contaminants such as arsenic, may impact greatly the feasibility of the processes.

Although the bulk of the work on spent catalyst has involved alumina and silica materials, some efforts have been conducted looking at the use of titania-based materials in cement/concrete manufacture. One such study<sup>8</sup> examined the use of a titanium dioxide producer's waste material in Portland cement clinker. However, this utilization route included the titania material as part of the feed to the cement kiln. As discussed above, the presence of toxic contaminants on spent SCR catalyst, such as arsenic, would be a concern in this type of high-temperature application. Although the study showed the feasibility of such a utilization for the materials studied, this

<sup>&</sup>lt;sup>8</sup> Potgieter, J.H., et. Al, "An Evaluation of the Incorporation of a Titanium Dioxide Producer's Waste Material in Portland Cement Clinker," Materials Letters 57 (2002) 157-163, Elsevier Science, B.V., November, 2002.

work is not considered as applicable to spent SCR catalysts as would be processes which used the catalyst as directly in the cement/concrete mix. Other technologies utilize titania, basically in a more pure form than spent SCR catalyst, to improve the color and brilliance of special concretes, or to capitalize on photocatalytic properties of these relatively pure titania materials. As a result, there is some industrial familiarity with the use of titania in concrete products.

Interesting information, at least partly applicable to spent SCR catalyst, is revealed in a World Patent<sup>9</sup> where the use of finely ground titania had the ability to increase the early strength of concretes. In this work, the preferred titania surface area<sup>10</sup> was 40 to 120 m²/g, which is consistent with common SCR catalyst surface areas. This work showed that high early strength concrete could be obtained by using 0.25 to 5% by weight of titania relative to the cement portion of the concrete. Although the source of the titania was not spent catalyst, the titania requirements would appear to match, at least in a very basic way, the characteristics of spent catalyst, assuming that the catalyst was very finely pulverized. In the patent, examples indicated that mortars could be prepared by using titania, which increased the early strength (24 hours) by as much as 50%. These high early strengths were only obtained by carefully controlling the titania particle size, but in any event, the utilization of titania did not appear to adversely affect the materials prepared. The results of this work offer some assurance that the presence of titania would not drastically affect the properties of the concrete, at least in terms of strength.

The use of spent SCR catalyst in flowable fills is perhaps even more attractive than traditional performance concrete applications. The specifications for flowable fill materials are generally not as stringent as for most concrete applications, and thus utilization of spent SCR catalyst in flowable fill may be more attractive due to a reduced risk in adversely impacting the final product. However, depending on the exact utilization of the flowable fill, a number of specifications may be required, including compressive strength, unit weight, flowability, permeability, settlement, insulation properties, and excavatability. Thus an evaluation of the effects of utilizing spent SCR catalyst in flowable fill applications would still be necessary prior to implementation.

The leaching characteristics of concrete/fill products utilizing spent SCR catalyst would likely be of particular interest. This is due to the large array of contaminants present on the catalyst which are associated with fly ash deposits and flue gas components. Thus an important part of developing any concrete/fill utilization route will likely be the determination of the leaching characteristics.

Given the very limited information available on utilizing spent SCR in cement/concrete applications, further work would be necessary to firmly establish the feasibility of such a utilization. Thus, this has been identified as a prospective area for future work. In any event, based upon the current data, it appears that this utilization route is potentially attractive.

<sup>&</sup>lt;sup>9</sup> Tontrup, C., et. Al., "Use of a Pulverulent Composition Comprising Titania and an Inorganic Binder to Increase Early Strength," WO/2007/128630.

<sup>&</sup>lt;sup>10</sup> As measured by the BET (Brunauer Emmitt Teller) method.

Attachment to Response to KU AG-1 Question No. 201 Page 1369 of 2028 Charnas

# Crescente, Angela

Wiseman, Sara Monday, October 03, 2011 6:40 PM Charnas, Shannon From: Sent:

To: Cc:

Crescente, Angela Journal Entries for September 2011 Revaluation.xlsx Subject:



Journal Entries for September ...

Shannon: Here are the ARO entries Angela will be posting for this month.

# (In Thousands)

# TC Settlement - LGE

Account	Debit	Credit
101		7,255
108	230	
182		564
230	7,589	

# TC New - LGE

Account	Debit	Credit
101	3,969	
108		114
182	267	
230		4,122

# TC New - KU

Account	Debit	Credit
101	3,664	
108		105
182	247	
230		3,806

# TC - LKE

Account	Debit	Credit
101	378	
108	11	
182		50
230		339

Attachment to Response to KU AG-1 Question No. 201 Page 1371 of 2028 Charnas

# (In Thousands)

# **Gas Transmission Mains**

Account	Debit	Credit
101	3,942	
108		9
182	9	
230		3,942

# Cane Run Landfill

Account	Debit	Credit
101	876	
230		876

# Mill Creek Landfill

Account	Debit	Credit
101	1,797	
230		1,797

#### Attachment to Response to KU AG-1 Question No. 201 Page 1372 of 2028 Charnas

# Crescente, Angela

From:

Harder, Tim

Sent:

Friday, September 30, 2011 12:22 PM

To:

Crescente, Angela

Subject:

RE: Project number 117136

Okay will do.

From: Crescente, Angela

Sent: Friday, September 30, 2011 12:22 PM

To: Harder, Tim

Subject: RE: Project number 117136

Thanks Tim! Please include any charges for the drainage ditches that are required for closing as well.

From: Harder, Tim

Sent: Friday, September 30, 2011 11:25 AM

To: Crescente, Angela

Subject: RE: Project number 117136

Importance: High

Thanks Angel. I actually received Charah's est. percentage completion for cover soil for September from Kevin. Unless I hear from you, I will use this ARO task to accrue in September.

From: Crescente, Angela

Sent: Friday, September 30, 2011 10:52 AM

To: Harder, Tim

Subject: Project number 117136

Tim,

I went ahead and changed the task name to CP ARO 2011 since we will probably have one for every year.

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1373 of 2028 Charnas

# Crescente, Angela

From:

Harder, Tim

Sent:

Friday, September 30, 2011 11:25 AM

To:

Crescente, Angela

Subject:

RE: Project number 117136

Importance:

High

Thanks Angel. I actually received Charah's est. percentage completion for cover soil for September from Kevin. Unless I hear from you, I will use this ARO task to accrue in September.

From: Crescente, Angela

Sent: Friday, September 30, 2011 10:52 AM

To: Harder, Tim

Subject: Project number 117136

Tim,

I went ahead and changed the task name to CP ARO 2011 since we will probably have one for every year.

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1374 of 2028 Charnas

# Crescente, Angela

From:

Bush, Tom

Sent:

Tuesday, September 27, 2011 2:38 PM

To:

Crescente, Angela; Aemmer, Bob; Amlung, Kim; Bell, Derek; Bland, John; Bloat, Sharon; Burnett, Elender; Chapman, Laura; Clements, Chad; Conrad, Teresa; Dave Smith; Erskine, Greg; Fackler, Andrea; Faske, Lisa; Harrington, Anne; Heitzmann, Ashley; Hickman, James;

Jackson, Carolyn; Keemer, Gabriela; Kinder, Debra; Marshall, Steve; Mazza, Frank;

McCammon, Virginia; McRae, Callie; Metts, Heather; Pienaar, Lesley; Raible, Eric; Raque, Bruce; Root, Stephanie; Scott Cole; Sheets, Toni; Shultz, Cathy; Skaggs, Jennifer; Smith, Helen; Stickler, Samantha; Strange, Vicki; Tipton, Karen; Veroff, Jamie; Wacker, Diana;

Watkins, Amanda; Williams, Scott; Wiseman, Sara; Wright, Sharon

Subject:

Added: New Account 403213

This account has been created.

Angela, this account has also been setup in OFMSDEV per your request.

From: Bush, Tom

Sent: Monday, September 19, 2011 7:30 AM

To: Erskine, Greg; Metts, Heather; Pienaar, Lesley; Raible, Eric; Shultz, Cathy; Strange, Vicki

Cc: Crescente, Angela

Subject: New Account 403213

Please see the attached request for new account 403213.

From: Wiseman, Sara

Sent: Friday, September 16, 2011 9:18 AM

To: Bush, Tom

Cc: Crescente, Angela

Subject: FW: GLAFF Change Request Form - Account 403213.xls

I approve this request.

This account is needed due to recording ARO gas transmission mains.

From: Crescente, Angela

Sent: Friday, September 16, 2011 9:14 AM

To: Wiseman, Sara

Subject: GLAFF Change Request Form - Account 403213.xls

GLAFF Change Request Form - ...

#### Attachment to Response to KU AG-1 Question No. 201 Page 1375 of 2028 Charnas

Segment Change Request Form: ACCOUNT

Type of change requested	Open new account	
Reason for requested change	New account for ARO Depreciation Expense	9
Account number	403213	
Account description	DEPREC EXP ARO GAS TRANSMISSION	
Account type	Expense	
Unit of measure	Dollars	
PPL income-statement report group	DEPRECIATION AND AMORTIZATION (PI	PLEDA)
Account flexfield attributes:		
Burden schedule assignment	None	
Project required	NO	
Project type	None	
Make available in VOLTS	NO	and the state of t
Kentucky sales taxable	NO	
Virginia sales taxable	NO	
·		
PPL mappings:		
PPL account	40310 - ARO Depreciation Expense	
PPL affiliate assignment	NOT REQUIRED	
·	-	
Financial statement assignments:		
Oracle consolidation worksheets - balance sheet	NOT REQUIRED	
Oracle consolidation worksheets - income statement	Depreciation, accretion, and amort expense	
FERC-basis utility balance sheet	NOT REQUIRED	
FERC-basis utility income statement	Depreciation	
Qualitative risks (for balance sheet reconciliation ranking):		
Susceptibility of the accounts or transactions to loss due to errors or		
fraud, including past errors in the account.  2. Volume of activity, complexity, and homogeneity of the individual	NOT REQUIRED	
transactions process through the account.  3. Nature of the account (e.g., suspense accounts generally warrant	NOT REQUIRED	
greater attention)  4. Level of management judgment used in	NOT REQUIRED	
the account.  5. Existence of related party transactions in the	NOT REQUIRED	
account.  6. Changes from the prior period in account characteristics	NOT REQUIRED	
(e.g., new complexities or subjectivity or new types of transactions).  7. Sensitivity of the account in effecting the reporting enity's compliance	NOT REQUIRED	
with legal or regulatory requirements, loan covenants, or other contractual requirements.  8. Override - Do you believe this account should have a Qualitative Risk Ranking of 3 (high) regardless of your responses to the seven	NOT REQUIRED	
questions preceding this one?	NOT REQUIRED	

#### Attachment to Response to KU AG-1 Question No. 201 Page 1376 of 2028 Charnas

#### Crescente, Angela

From:

Crescente, Angela

Sent:

Monday, September 26, 2011 4:47 PM

To: Cc: Charnas, Shannon Wiseman, Sara

Subject:

FW: Plant closures

Shannon:

Please see the email below as promised.

Thanks, Angela

From: Winkler, Michael

Sent: Monday, September 26, 2011 10:46 AM

**To:** Hudson, Rusty; Crescente, Angela **Cc:** Wiseman, Sara; Cosby, David **Subject:** RE: Plant closures

Everything Rusty stated is accurate.

Wink

From: Hudson, Rusty

Sent: Monday, September 26, 2011 10:36 AM

To: Crescente, Angela

Cc: Wiseman, Sara; Winkler, Michael; Cosby, David

Subject: RE: Plant closures

The pond closure dates we are currently looking at are 2017 for Pineville, 2018 for Tyrone, and Cane Run, and 2019 for Green River. The timing on the pond closures will depend on the final rules that are scheduled to be issued in late 2012. There is expected to be a five-year implementation period, but it is very possible the 2012 date could be delayed, therefore the range on the closure dates could be between 2017 and 2019, if not later. On the plants to be retired (Tyrone, Green River, Cane Run coal), the current plans are to seal them up and keep them dry. There are no dollars in the long-term plan to demolish those units or to remove the asbestos. Wink or Dave, if you have a different view than this please reply back. Rusty

From: Crescente, Angela

Sent: Monday, September 26, 2011 10:16 AM

To: Hudson, Rusty Cc: Wiseman, Sara Subject: Plant closures

Rusty:

Attachment to Response to KU AG-1 Question No. 201 Page 1377 of 2028

For ARO purposes, are we planning on closing the ponds and landfills associated with Cane Run, Green River, and Tyrone when they are retired? If so, would that date be 2015? If we are planning closure, Sara and I will need to discuss with Shannon the possible revaluation (changing the date to 2015) in order to reflect the plan in the ARO liabilities. Also, I understand there is discussion between just retiring the plants or also demolishing them which also affects the asbestos AROs. Please advise us on anything you can in this regard so that we can plan accordingly. We are in the process of revaluing the costs for our landfills this month, so it would be good if we could do this all at the same time if possible.

Thanks for your help, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1378 of 2028 Charnas

#### Crescente, Angela

From:

Ritchey, Stacy

Sent:

Monday, September 12, 2011 9:37 AM

To:

Clark, Ed

Cc:

Crescente, Angela

Subject:

Non Standard JE Number KU

Ed,

Could you provide me with a Non Standard JE number for September for KU? I need to reclass a vendor discount that was coded to ARO that should've been coded to removal. When the COD was completed the vendor discount did not get re-coded as it was originally automatically generated, and according to AP it must be reclassed via journal entry.

Thanks,

Stacy Ritchey Sr Budget Analyst Project Engineering Phone: (502) 627-4388

Fax: (502) 217-4980

Attachment to Response to KU AG-1 Question No. 201 Page 1379 of 2028 Charnas

### Crescente, Angela

From:

Crescente, Angela

Sent:

Friday, July 22, 2011 2:25 PM

To:

Riggs, Eric

Subject:

Depr numbers - 254

Tracking:

Recipient

nt

Riggs, Eric

Read: 7/22/2011 2:43 PM

Read

Eric,

I have attached three spreadsheets:

254 activity for

254 EB 12-2009

254 EB 12-2009

depr study.xl... LGE.xlsx

KU.xlsx

The one called "254 activity for depr study" is Ending Balance December 2010. The other two are Ending Balance December 2009.

Thanks,

Angela

description	amount
KU-131101-AROP EWB 1 Struct & Imp Total	(25,522.07)
KU-131101-AROP EWB 3 Struct & Imp Total	(5,033.35)
KU-131101-AROP GH 1 Struct & Imp Total	(5,718.83)
KU-131101-AROP GR 1-2 Struct & Imp Total	(49,176.43)
KU-131101-AROP GR 4 Struct & Impr Total	(8,456.48)
KU-131101-AROP TY 3 Struct & Impr Total	(10,336.50)
KU-131201-AROP EWB 1 Boiler Plt Eqp Total	(1,297,304.32)
KU-131201-AROP EWB 3 Boiler Plt Eqp Total	(1,735.42)
KU-131201-AROP GH 1 Boiler Plt Equp Total	(11,143.11)
KU-131201-AROP GH 1SC Boiler Plt Eq Total	(878,800.93)
KU-131201-AROP GH 2 Boiler PIt Equp Total	(21,737.89)
KU-131201-AROP GH 4 Boiler Pit Equp Total	(672,517.15)
KU-131201-AROP GR 1-2 Boiler Plt Eq Total	(59,642.89)
KU-131201-AROP GR 4 Boiler Plt Equp Total	(14,286.35)
KU-131201-AROP TY 1-2 Boiler Plt Eq Total	(1,190.69)
KU-131201-AROP TY 3 Boiler Plt Equp Total	(203,238.97)
KU-131401-AROP TY 3 Turbogenerator Total	(37,014.82)
KU-131501-AROP EWB 1 Acc Electric Total	(16,599.72)
KU-131501-AROP EWB 2 Acc Electric Total	(12,879.17)
KU-131501-AROP EWB 3 Acc Electric Total	(34,426.41)
KU-131501-AROP GH 1 Acc Electric Total	(49,495.26)
KU-131501-AROP GH 2 Acc Electric Total	(119,104.22)
KU-131501-AROP GH 3 Acc Electric Total	(279,532.95)
KU-131501-AROP GH 4 Acc Electric Total	(145,396.19)
KU-131501-AROP GR 4 Acc Electric Total	(78,039.65)
KU-131501-AROP TY3 Acc Electric Total	(22,144.06)
KU-134501-AROP EWB 10 Acc Electric Total	(52,723.94)
KU-134501-AROP EWB 11 Acc Electric Total	(52,723.94)
KU-134501-AROP EWB 5 Acc Electric Total	(51,669.47)
KU-134501-AROP EWB 6 Acc Electric Total	(31,634.36)
KU-134501-AROP EWB 7 Acc Electric Total	(31,634.36)
KU-134501-AROP EWB 8 Acc Electric Total	(51,669.47)
KU-134501-AROP EWB 9 Acc Electric Total	(48,506.02)
Grand Total	(4,381,035.39)

#### COR

BR3	(1,060,171.41)	0.032	(33,925.49)
BR2	(1,060,171.41)	0.012	(12,722.06)
BR1	(1,060,171.41)	0.015	(15,902.57)
GH1	(1,060,171.41)	0.046	(48,767.88)
GH2	(1,060,171.41)	0.111	(117,679.03)
GH4	(1,060,171.41)	0.131	(138,882.45)
GH3	(1,060,171.41)	0.259	(274,584.40)
GR4	(1,060,171.41)	0.069	(73,151.83)
TY3	(1,060,171.41)	0.021	(22,263.60)
BR6CT	(1,060,171.41)	0.03	(31,805.14)
BR7CT	(1,060,171.41)	0.03	(31,805.14)
BR9CT	(1,060,171.41)	0.046	(48,767.88)
BR8CT	(1,060,171.41)	0.049	(51,948.40)
BR5CT	(1,060,171.41)	0.049	(51,948.40)
BR10CT	(1,060,171.41)	0.05	(53,008.57)
BR11CT	(1,060,171.41)	0.05	(53,008.57)
			(1,060,171.41)

### SAL

BR3	5,692.50	0.032	182.16
BR2	5,692.50	0.012	68.31
BR1	5,692.50	0.015	85.39
GH1	5,692.50	0.046	261.86
GH2	5,692.50	0.111	631.87
GH4	5,692.50	0.131	745.72
GH3	5,692.50	0.259	1,474.36
GR4	5,692.50	0.069	392.78
TY3	5,692.50	0.021	119.54
BR6CT	5,692.50	0.03	170.78
BR7CT	5,692.50	0.03	170.78
BR9CT	5,692.50	0.046	261.86
BR8CT	5,692.50	0.049	278.93
BR5CT	5,692.50	0.049	278.93
BR10CT	5,692.50	0.05	284.63
BR11CT	5,692.50	0.05	284.63
			5,692.50

Attachment to Response to KU AG-1 Question No. 201 Page 1382 of 2028 Charnas

description	amount
LGE-131101-AROP CR 1 Struct & Impr Total	(1,220.00)
LGE-131101-AROP CR 6 Struct & Impr Total	(380,477.78)
LGE-131101-AROP MC 1 Struct & Impr Tota	(22,427.08)
LGE-131101-AROP MC 3 Struct & Impr Tota	(53,695.57)
LGE-131101-AROP MC 4 Struct & Impr Tota	(81,226.91)
LGE-131101-AROP TC 1 Struct & Impr Total	(109,157.42)
LGE-131201-AROP MC3 Boiler Plt Equp Tot	(24,018.34)
LGE-131201-AROP MC4 SO2 Boiler Pit Tota	(43,745.93)
LGE-131501-AROP Cane Run 4 Acc Total	(2,698.81)
LGE-131501-AROP Cane Run 5 Acc Total	(1,283.74)
LGE-131501-AROP Cane Run 6 Acc Total	(17,674.73)
LGE-131501-AROP Mill Creek 1 Acc Total	(4,087.35)
LGE-131501-AROP Mill Creek 2 Acc Total	(5,175.70)
LGE-131501-AROP Mill Creek 3 Acc Total	(5,445.57)
LGE-131501-AROP Mill Creek 4 Acc Total	(11,010.24)
LGE-131501-AROP Trimble Unit 1 Acc Tota	(24,560.31)
LGE-235250- IN AROP Gas Stor UG Total	2,453.09
LGE-235250- KY AROP Gas Stor UG Total	(2,389,972.12)
Grand Total	(3,175,424.51)
•	

Attachment to Response to KU AG-1 Question No. 201 Page 1383 of 2028 Charnas

COR			
CR4	(3,555.07)	0.038	(135.09)
CR5	(3,555.07)	0.025	(88.88)
CR6	(3,555.07)	0.321	(1,141.18)
MC2	(3,555.07)	0.103	(366.17)
MC4	(3,555.07)	0.289	(1,027.42)
MC3	(3,555.07)	0.138	(490.60)
MC1	(3,555.07)	0.086	(305.74)
			(3,555.07)
SAL			
CR4	948.02	0.038	36.02
CR5	948.02	0.025	23.70
CR6	948.02	0.321	304.31
MC2	948.02	0.103	97.65
MC4	948.02	0.289	273.98
MC3	948.02	0.138	130.83
		0.006	04 50
MC1	948.02	0.086	81.53

description	amount
LGE-131101-AROP CR 1 Struct & Impr Total	(1,220.00)
LGE-131101-AROP CR 6 Struct & Impr Total	(374,756.42)
LGE-131101-AROP MC 1 Struct & Impr Total	(22,153.12)
LGE-131101-AROP MC 3 Struct & Impr Total	(52,454.77)
LGE-131101-AROP MC 4 Struct & Impr Total	(71,795.75)
LGE-131101-AROP TC 1 Struct & Impr Total	(92,769.38)
LGE-131201-AROP MC3 Boiler Plt Equp Total	(21,173.02)
LGE-131201-AROP MC4 SO2 Boiler Plt Total	(40,996.61)
LGE-131501-AROP Cane Run 4 Acc Total	(1,098.97)
LGE-131501-AROP Cane Run 5 Acc Total	(533.86)
LGE-131501-AROP Cane Run 6 Acc Total	(7,312.97)
LGE-131501-AROP Mill Creek 1 Acc Total	(1,710.03)
LGE-131501-AROP Mill Creek 2 Acc Total	(2,155.90)
LGE-131501-AROP Mill Creek 3 Acc Total	(2,315.85)
LGE-131501-AROP Mill Creek 4 Acc Total	(4,698.36)
LGE-131501-AROP Trimble Unit 1 Acc Total	(18,438.15)
LGE-235250- IN AROP Gas Stor UG Total	5,653.81
LGE-235250- KY AROP Gas Stor UG Total	(2,365,199.60)
Grand Total	(3,075,128.95)

December 2009 Ending Balance

Attachment to Response to KU AG-1 Question No. 201 Page 1385 of 2028 Charnas

### COR

CR4	(3,555.07)	0.038	(135.09)
CR5	(3,555.07)	0.025	(88.88)
CR6	(3,555.07)	0.321	(1,141.18)
MC2	(3,555.07)	0.103	(366.17)
MC4	(3,555.07)	0.289	(1,027.42)
MC3	(3,555.07)	0.138	(490.60)
MC1	(3,555.07)	0.086	(305.74)
			(3,555.07)

### SAL

02 70
70
31
65
98
83
53
02

description	amount
KU-131101-AROP EWB 1 Struct & Imp Total	(25,454.51)
KU-131101-AROP EWB 3 Struct & Imp Total	(4,956.55)
KU-131101-AROP GH 1 Struct & Imp Total	(5,620.55)
KU-131101-AROP GR 1-2 Struct & Imp Total	(49,176.43)
KU-131101-AROP GR 4 Struct & Impr Total	(8,456.48)
KU-131101-AROP TY 3 Struct & Impr Total	(10,336.50)
KU-131201-AROP EWB 1 Boiler Plt Eqp Total	(1,206,167.92)
KU-131201-AROP EWB 3 Boiler Plt Eqp Total	(1,708.30)
KU-131201-AROP GH 1 Boiler Plt Equp Total	(10,401.63)
KU-131201-AROP GH 1SC Boiler Plt Eq Total	(823,961.77)
KU-131201-AROP GH 2 Boiler Plt Equp Total	(20,904.73)
KU-131201-AROP GH 4 Boiler Plt Equp Total	(601,169.95)
KU-131201-AROP GR 1-2 Boiler Plt Eq Total	(58,499.53)
KU-131201-AROP GR 4 Boiler Plt Equp Total	(13,941.35)
KU-131201-AROP TY 1-2 Boiler Plt Eq Total	(1,190.33)
KU-131201-AROP TY 3 Boiler Plt Equp Total	(199,947.13)
KU-131401-AROP TY 3 Turbogenerator Total	(36,636.94)
KU-131501-AROP EWB 1 Acc Electric Total	(16,118.16)
KU-131501-AROP EWB 2 Acc Electric Total	(12,740.45)
KU-131501-AROP EWB 3 Acc Electric Total	(34,006.05)
KU-131501-AROP GH 1 Acc Electric Total	(48,886.50)
KU-131501-AROP GH 2 Acc Electric Total	(117,838.34)
KU-131501-AROP GH 3 Acc Electric Total	(275,580.39)
KU-131501-AROP GH 4 Acc Electric Total	(140,928.83)
KU-131501-AROP GR 4 Acc Electric Total	(74,790.05)
KU-131501-AROP TY3 Acc Electric Total	(22,144.06)
KU-134501-AROP EWB 10 Acc Electric Total	(52,723.94)
KU-134501-AROP EWB 11 Acc Electric Total	(52,723.94)
KU-134501-AROP EWB 5 Acc Electric Total	(51,669.47)
KU-134501-AROP EWB 6 Acc Electric Total	(31,634.36)
KU-134501-AROP EWB 7 Acc Electric Total	(31,634.36)
KU-134501-AROP EWB 8 Acc Electric Total	(51,669.47)
KU-134501-AROP EWB 9 Acc Electric Total	(48,506.02)
Grand Total	(4,142,124.99)

**December 2009 Ending Balance** 

#### COR

(1,060,171.41)	0.032	(33,925.49)
(1,060,171.41)	0.012	(12,722.06)
(1,060,171.41)	0.015	(15,902.57)
(1,060,171.41)	0.046	(48,767.88)
(1,060,171.41)	0.111	(117,679.03)
(1,060,171.41)	0.131	(138,882.45)
(1,060,171.41)	0.259	(274,584.40)
(1,060,171.41)	0.069	(73,151.83)
(1,060,171.41)	0.021	(22,263.60)
(1,060,171.41)	0.03	(31,805.14)
(1,060,171.41)	0.03	(31,805.14)
(1,060,171.41)	0.046	(48,767.88)
(1,060,171.41)	0.049	(51,948.40)
(1,060,171.41)	0.049	(51,948.40)
(1,060,171.41)	0.05	(53,008.57)
(1,060,171.41)	0.05	(53,008.57)
		(1,060,171.41)
	(1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41) (1,060,171.41)	(1,060,171.41) 0.012 (1,060,171.41) 0.015 (1,060,171.41) 0.046 (1,060,171.41) 0.111 (1,060,171.41) 0.131 (1,060,171.41) 0.259 (1,060,171.41) 0.069 (1,060,171.41) 0.021 (1,060,171.41) 0.03 (1,060,171.41) 0.03 (1,060,171.41) 0.046 (1,060,171.41) 0.049 (1,060,171.41) 0.049 (1,060,171.41) 0.049 (1,060,171.41) 0.049

#### SAL

BR3	5,692.50	0.032	182.16
BR2	5,692.50	0.012	68.31
BR1	5,692.50	0.015	85.39
GH1	5,692.50	0.046	261.86
GH2	5,692.50	0.111	631.87
GH4	5,692.50	0.131	745.72
GH3	5,692.50	0.259	1,474.36
GR4	5,692.50	0.069	392.78
TY3	5,692.50	0.021	119.54
BR6CT	5,692.50	0.03	170.78
BR7CT	5,692.50	0.03	170.78
BR9CT	5,692.50	0.046	261.86
BR8CT	5,692.50	0.049	278.93
BR5CT	5,692.50	0.049	278.93
BR10CT	5,692.50	0.05	284.63
BR11CT	5,692.50	0.05	284.63
			5,692.50

Attachment to Response to KU AG-1 Question No. 201 Page 1388 of 2028 Charnas

#### Crescente, Angela

From:

Ritchey, Stacy

Sent:

Thursday, July 21, 2011 9:35 AM

To:

Rose, Bruce Crescente, Angela

Cc: Subject:

RE: Set Up of Landfill Projects

Bruce,

Thanks for the information! I meet with Bob each month to discuss the forecast. I will print this e-mail and discuss how we can go about classifying the existing tasks. I will be in contact with Angela soon.

Thanks,

Stacy

From: Rose, Bruce

Sent: Thursday, July 21, 2011 9:25 AM

**To:** Ritchey, Stacy **Cc:** Crescente, Angela

Subject: Set Up of Landfill Projects

Stacy,

As you know, Sara, Angela, and myself met yesterday to discuss the project set up of the landfill projects, and to determine how these projects will be unitized. Per our meeting with Scott Straight and the civil engineers on the projects, there will be a project for each separate phase of the landfill work at each site. They also mentioned that there will be essentially sub-phases in each project that could be considered in service separately. This method will work well for Prop. Acct. in our unitization process, as well as the reporting to IMEA/PA, and the Rates Dept. for ECR.

We will need to ask your assistance with the subtasks. Hopefully, there will be just one task for each sub-phase, but in the event additional tasks are necessary, or should someone at the plant open a Maximo task, we will need to be made aware of this as soon as possible. We have to map the tasks for a sub-phase into a separate work order in order to group them together. This is also more easily done BEFORE the task has charges on it, otherwise we have to perform a special JE in PowerPlant to associate the old charges to the grouping work order. For the existing TC project, we will need to know what existing tasks we need to aggregate together for each sub-phase, and then we will have to perform a JE for the association with the new work order.

Also, as I mentioned to Joe and Bob yesterday, We will be relying on them and yourself to notify us when each sub-phase is considered I/S. I understand there will be lagging charges, but the bulk of the charges should be there when the sub-phase is moved to I/S.

Angela was wanting you to contact her concerning going ahead with the set up of ARO tasks to associate with the capping of each sub-phase. It will make it easier to map these tasks at the same time that we are mapping the capital tasks, and we know that although it may be well into the future, we will definitely be capping the landfills. Thanks for your help.

Attachment to Response to KU AG-1 Question No. 201 Page 1389 of 2028 Charnas

### Crescente, Angela

From:

Riggs, Eric

Sent:

Wednesday, July 20, 2011 3:21 PM

To:

Crescente, Angela

Subject:

LG&E\_ Plant report\_DEC 10 -Depr Reserve Summary - working file.xlsx

Importance:

High



LGE\_Plant report\_DEC 10 -...

#### Angela,

Please let me know when we can discuss adding the 254 account numbers to this file and the KU numbers as well.

Thanks, Eric Riggs

	KY	IN	Total
	Balance	Balance	Balance
Electric Distribution			
LGE-136020-Elect. Dist. Substation	<u>.</u>		_
LGE-136025-Elect, Dist, Substation	-		-
LGE-136100-Electric Distribution Su	(1,921,347.73)		(1,921,347.73)
LGE-136200-Elect. Dist. Substation	(37,244,161.27)		(37,244,161.27)
LGE-136205-Elect. Dist. Substation	-		<del>-</del>
LGE-136400-Electric Distribution -	(66,944,686.12)		(66,944,686.12)
LGE-136500-Electric Distribution -	(91,531,623.62)		(91,531,623.62)
LGE-136600-Electric Distribution -	(25,555,775.76)		(25,555,775.76)
LGE-136700-Electric Distribution -	(46,512,557.79)		(46,512,557.79)
LGE-136800-Line Transformers	(60,280,828.41)		(60,280,828.41)
LGE-136910-Electric Distribution -	(1,625,948.89)		(1,625,948.89)
LGE-136920-Electric Distribution -	(18,798,716.66)		(18,798,716.66)
LGE-137000-Meters	(18,509,319.94)		(18,509,319.94)
LGE-137310-Electric Distribution -	(15,978,153.05)		(15,978,153.05)
LGE-137320-Electric Distribution -	(21,238,523.58)		(21,238,523.58)
LGE-137340-Electric Dist Street	(38,996.73)		(38,996.73)
LGE-137405-ARO Cost Elec Dist (L/B)	(1,256.54)		(1,256.54)
	(406,181,896.09)		(406,181,896.09)
Electric General Plant			-
LGE-139210-Transportation - Cars Tr	(8,803,312.17)		(8,803,312.17)
LGE-139220-Transportation - Traile	(251,977.49)		(251,977.49)
LGE-139400-Tools, Shop, and Garage	(1,444,853.81)		(1,444,853.81)
LGE-139500-Laboratory Equipment	0.00		0.00
LGE-139610-Power Op Equip-Hourly Rt	(2,240,916.57)		(2,240,916.57)
LGE-139620-Power Op Equip-Other	(26,826.26)		(26,826.26)
202 100020 Folio. Op Equip Outo.	(12,767,886.30)		(12,767,886.30)
			-
Electric Hydro Production			-
LGE-133020-Ohio Falls Non-Project	<b>*</b>		-
LGE-133020-Ohio Falls Project 289	-		-

	KY Balance	IN Balance	Total Balance
LGE-133100-Ohio Falls Non-Project	(38,518.71)		(38,518.71)
LGE-133100-Ohio Falls Project 289	(4,264,066.86)		(4,264,066.86)
LGE-133200-Ohio Falls Project 289	(1,476,442.85)		(1,476,442.85)
LGE-133300-Ohio Falls Project 289	(956,211.59)		(956,211.59)
LGE-133400-Ohio Falls Project 289	(1,803,592.25)		(1,803,592.25)
LGE-133500-Ohio Falls Non-Project	(3,306.92)		(3,306.92)
LGE-133500-Ohio Falls Project 289	(44,785.40)		(44,785.40)
LGE-133600-Ohio Falls Non-Project	(872.13)		(872.13)
LGE-133600-Ohio Falls Project 289	(16,934.08)		(16,934.08)
LGE-133707-ARO Cost Hydro Prod (Eqp	(364.10)		(364,10)
•	(8,605,094.89)		(8,605,094.89)
			-
Electric Other Production			-
LGE-134020-TC 5 CT Land	-		-
LGE-134020-Waterside - Land	-		<u></u>
LGE-134100-Structures and Imp	(3,841,463.58)		(3,841,463.58)
LGE-134200-Fuel Holders, Prod	(2,022,097.37)		(2,022,097.37)
LGE-134300-Prime Movers	(34,755,976.79)		(34,755,976.79)
LGE-134400-Generators	(15,588,444.38)		(15,588,444.38)
LGE-134500-Accessory Electric	(5,425,826.61)		(5,425,826.61)
LGE-134600-Misc. Power Plant	(1,172,421.10)		(1,172,421.10)
LGE-134705-ARO Cost Other Prod (L/B	(192.68)		(192.68)
LGE-134707-ARO Cost Other Prod (Eqp	(0.00)		(0.00)
	(62,806,422.51)		(62,806,422.51)

	KY	<b>IN</b>	Total
	Balance	Balance	Balance
Electric Steam Production			-
LGE-131020-Steam Production - Land	-		-
LGE-131100-Cane Run Unit 1 Structur	(5,048,304.93)		(5,048,304.93)
LGE-131100-Cane Run Unit 2 Structur	(2,106,202.77)		(2,106,202.77)
LGE-131100-Cane Run Unit 3 Structur	(5,917,984.83)		(5,917,984.83)
LGE-131100-Cane Run Unit 4 SO2-Stru	(1,721,629.00)		(1,721,629.00)
LGE-131100-Cane Run Unit 4 Structur	(4,622,834.20)		(4,622,834,20)
LGE-131100-Cane Run Unit 5 SO2-Stru	(2,327,062.63)		(2,327,062.63)
LGE-131100-Cane Run Unit 5 Structur	(6,149,922.39)		(6,149,922.39)
LGE-131100-Cane Run Unit 6 SO2-Stru	(2,164,899.19)		(2,164,899.19)
LGE-131100-Cane Run Unit 6 Structur	(13,283,279.44)		(13,283,279.44)
LGE-131100-Mill Creek Unit 1 SO2-St	(1,946,270.36)	0 0	(1,946,270.36)
LGE-131100-Mill Creek Unit 1 Struct	(17,178,409.71)		(17,178,409.71)
LGE-131100-Mill Creek Unit 2 SO2-St	(1,604,501.88)		(1,604,501.88)
LGE-131100-Mill Creek Unit 2 Struct	(9,992,528.13)		(9,992,528.13)
LGE-131100-Mill Creek Unit 3 SO2-St	(480,413.00)		(480,413.00)
LGE-131100-Mill Creek Unit 3 Struct	(20,881,166.87)		(20,881,166.87)
LGE-131100-Mill Creek Unit 4 SO2-St	(4,891,395.55)		(4,891,395.55)
LGE-131100-Mill Creek Unit 4 Struct	(37,077,042.12)		(37,077,042.12)
LGE-131100-TC 1 Future Use - 105	(11,260.94)		(11,260.94)
LGE-131100-Trimble Unit 1 SO2-Struc	(355,586.47)		(355,586.47)
LGE-131100-Trimble Unit 1 Structure	(56,786,000.45)		(56,786,000.45)
LGE-131100-Structures & Imp	(194,546,694.86)		(194,546,694.86)
LGE-131101-AROP CR 1 Struct & Impr	(5,430.86)		(5,430.86)
LGE-131101-AROP CR 6 Struct & Impr	(2,167,176.37)		(2,167,176.37)
LGE-131101-AROP MC 1 Struct & Impr	(142,846.52)		(142,846,52)
LGE-131101-AROP MC 3 Struct & Impr	(622,241.65)		(622,241.65)
LGE-131101-AROP MC 4 Struct & Impr	(3,587,955.18)		(3,587,955.18)
LGE-131101-AROP TC 1 Struct & Impr	(2,489,420.81)		(2,489,420.81)
LGE-131101-AROP Struct & Impr	(9,015,071.39)		(9,015,071.39)
LGE-131110-CR 6 Capital Leased Equi	(1,097.40)		(1,097.40)
LGE-131110-MC 4 Capital Leased Equi	(1,264.53)		(1,264.53)

	KY	IN	Total	
	Balance	Balance	Balance	
LGE-131110-CAPITAL LEASED EQUIP	(2,361.93)		(2,361.93)	
LGE-131200-Cane Run Locomotives - B	(54,187.52)		(54,187.52)	eritaria de la composición dela composición de la composición de la composición dela composición dela composición dela composición de la composición dela composició
LGE-131200-Cane Run Rail Cars - Boi	(1,114,249.37)		(1,114,249.37)	2000 pe de Balantena (j. 1811)
LGE-131200-Cane Run Unit 1 Boiler P	(1,228,538.15)	Janus Jangton (Siel Nith	(1,228,538.15)	
LGE-131200-Cane Run Unit 2 Boiler P	(152,754.79)		(152,754.79)	
LGE-131200-Cane Run Unit 3 Boiler P	(1,182,185.79)		(1,182,185.79)	
LGE-131200-Cane Run Unit 4 Boiler P	(19,926,728.43)	olego 2001 etkiril 18 eksterio de Na eksterio de la eksterio en en eksteri	(19,926,728.43)	
LGE-131200-Cane Run Unit 4 SO2 Boil	(18,709,047.02)		(18,709,047.02)	
LGE-131200-Cane Run Unit 5 Boiler P	(16,267,964.56)		(16,267,964.56)	
LGE-131200-Cane Run Unit 5 SO2 Boil	(29,107,153.47)		(29,107,153.47)	
LGE-131200-Cane Run Unit 6 Boiler P	(27,996,649.96)		(27,996,649.96)	
LGE-131200-Cane Run Unit 6 SO2 Boil	(27,029,885.93)	e geren de governe erek biske. Geografia	(27,029,885.93)	
LGE-131200-MC Offsite Rail Cars		The state of the section of the sect		
LGE-131200-Mill Creek Locomotives B	(472,402.15)		(472,402.15)	
LGE-131200-Mill Creek Rail Cars Boi	(2,121,302.02)		(2,121,302.02)	
LGE-131200-Mill Creek Unit 1 Boiler	(32,761,422.75)		(32,761,422.75)	esemble of the first state of
LGE-131200-Mill Creek Unit 1 SO2 Bo	(30,638,148.04)	•	(30,638,148.04)	Marine Miller Vietning
LGE-131200-Mill Creek Unit 2 Boiler	(24,757,137.23)		(24,757,137.23)	
LGE-131200-Mill Creek Unit 2 SO2 Bo	(26,905,062.64)		(26,905,062.64)	
LGE-131200-Mill Creek Unit 3 Boiler	(64,365,663.77)	in. Granda (granda argumatar granda argumatar garan granda argumatar garan granda argumatar garan garan garan garan	(64,365,663.77)	
LGE-131200-Mill Creek Unit 3 SO2 Bo	(33,692,759.92)	aus gesendi dik bise diska audi sedim Jamininga pada diska kalikatan	(33,692,759.92)	
LGE-131200-Mill Creek Unit 4 Boiler	(98,189,484.04)		(98,189,484.04)	
LGE-131200-Mill Creek Unit 4 SO2 Bo	(72,966,455.50)		(72,966,455.50)	
LGE-131200-TC 1 Futue Use - 105	(595.38)		(595.38)	
LGE-131200-Trimble Unit 1 Boiler Pl	(73,129,616.71)		(73,129,616.71)	
LGE-131200-Trimble Unit 1 SO2 Boile	(44,272,966.31)		(44,272,966.31)	
LGE-131200-Boiler	(647,042,361.45)		(647,042,361.45)	
LGE-131201-AROP MC3 Boiler Plt Equp	(234,246.51)		(234,246.51)	
LGE-131201-AROP MC4 SO2 Boiler Plt	(337,521.12)		(337,521.12)	
LGE-131201-AROP Boiler Plt	(571,767.63)		(571,767.63)	
LGE-131400-Cane Run Unit 1 Turbogen	(158,076.86)		(158,076.86)	Desperation of the Community of the Comm
LGE-131400-Cane Run Unit 2 Turbogen	(20,928.57)	Burney Burney	(20,928.57)	

LGE-131400-Cane Run Unit 3 Turbogen (8,674,789.57) (8,674,789.57) LGE-131400-Cane Run Unit 6 Turbogen (8,674,789.57) (8,674,789.57) LGE-131400-Cane Run Unit 6 Turbogen (7,650,532.04) (7,650,532.04) LGE-131400-Cane Run Unit 6 Turbogen (10,892,905.67) (10,892,905.67) LGE-131400-Mill Creek Unit 1 Turboge (12,749,251.29) (12,749,251.29) LGE-131400-Mill Creek Unit 2 Turbog (12,911,907.45) (12,911,907.45) LGE-131400-Mill Creek Unit 3 Turbog (21,146,756.78) (21,146,756.78) LGE-131400-Mill Creek Unit 3 Turbog (21,146,756.78) (21,146,756.78) LGE-131400-Mill Creek Unit 1 Turboge (27,967,070.14) (27,967,070.14) LGE-131400-Tirble Unit 1 Turbogen (27,967,070.14) (27,967,070.14) LGE-131400-Turbogenerators (20,348,827.48) (21,348,827.48) LGE-131400-Turbogenerators (12,6578,897.64) (126,578,897.64) LGE-131500-Cane Run Unit 1 Accessor (2,336,183.31) (2,336,183.31) LGE-131500-Cane Run Unit 2 Accessor (1,625,642.34) (1,625,642.34) LGE-131500-Cane Run Unit 3 Accessor (1,625,642.34) (1,625,642.34) LGE-131500-Cane Run Unit 4 SO2 Acce (2,234,481.45) (2,234,481.45) LGE-131500-Cane Run Unit 4 SO2 Acce (2,234,481.45) (2,234,481.45) LGE-131500-Cane Run Unit 5 SO2 Acce (3,068,643.86) (3,068,643.86) LGE-131500-Cane Run Unit 5 Accessor (5,102,692.30) (5,102,692.30) LGE-131500-Cane Run Unit 6 Accessor (5,102,692.30) (5,102,692.30) LGE-131500-Cane Run Unit 6 Accessor (5,102,692.30) (5,102,692.30) LGE-131500-Cane Run Unit 6 SO2 Acce (2,848,782.12) LGE-131500-Cane Run Unit 6 Accessor (5,102,692.30) (5,102,692.30) LGE-131500-Mill Creek Unit 1 Access (7,639,507.03) (7,639,507.03) LGE-131500-Mill Creek Unit 1 Access (1,548,792.12) (2,244,783.17) (5,247,233.77) LGE-131500-Mill Creek Unit 1 Access (1,548,792.12) (2,249,782.12) LGE-131500-Mill Creek Unit 1 Access (1,548,793.17) (5,247,233.77) LGE-131500-Mill Creek Unit 1 Access (1,548,793.17) (5,247,233.77) LGE-131500-Mill Creek Unit 1 Access (1,568,793.83) (3,318,67.93) LGE-131500-Mill Creek Unit 1 Access (1,568,793.83) (3,318,67.93) LGE-131500-Mill Creek Unit 1 Access (1,568,793.83) (3,318,67.93) L		KY	IN .	Total
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LGE-131500-Cane Run Unit 6 SO2 Acce       (2,849,782.12)         LGE-131500-Mill Creek Unit 1 Access       (7,639,507.03)         LGE-131500-Mill Creek Unit 1 SO2 Ac       (6,247,233.72)         LGE-131500-Mill Creek Unit 2 Access       (4,384,884.52)         LGE-131500-Mill Creek Unit 2 SO2 Ac       (5,128,383.11)         LGE-131500-Mill Creek Unit 3 Access       (11,551,218.78)         LGE-131500-Mill Creek Unit 3 SO2 Ac       (3,313,867.93)         LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)         LGE-131500-Mill Creek Unit 4 SO2 Ac       (5,712,368.74)         LGE-131500-TC 1 Future Use - 105       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)         LGE-131500-Accessory       (23,480,030.83)         LGE-131500-Accessory       (10,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)	LGE-131500-Cane Run Unit 5 SO2 Acce	(3,068,643.86)		(3,068,643.86)
LGE-131500-Mill Creek Unit 1 Access       (7,639,507.03)       (7,639,507.03)         LGE-131500-Mill Creek Unit 1 SO2 Ac       (6,247,233.72)       (6,247,233.72)         LGE-131500-Mill Creek Unit 2 Access       (4,384,884.52)       (4,384,884.52)         LGE-131500-Mill Creek Unit 2 SO2 Ac       (5,128,383.11)       (5,128,383.11)         LGE-131500-Mill Creek Unit 3 Access       (11,551,218.78)       (11,551,218.78)         LGE-131500-Mill Creek Unit 4 Access       (3,313,867.93)       (3,313,867.93)         LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)       (15,048,710.72)         LGE-131500-Mill Creek Unit 4 SO2 Ac       (5,712,368.74)       (5,712,368.74)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Mill Creek Unit 1 SO2 Ac       (6,247,233.72)       (6,247,233.72)         LGE-131500-Mill Creek Unit 2 Access       (4,384,884.52)       (4,384,884.52)         LGE-131500-Mill Creek Unit 2 SO2 Ac       (5,128,383.11)       (5,128,383.11)         LGE-131500-Mill Creek Unit 3 Access       (11,551,218.78)       (11,551,218.78)         LGE-131500-Mill Creek Unit 3 SO2 Ac       (3,313,867.93)       (3,313,867.93)         LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)       (15,048,710.72)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Mill Creek Unit 2 Access       (4,384,884.52)       (4,384,884.52)         LGE-131500-Mill Creek Unit 2 SO2 Ac       (5,128,383.11)       (5,128,383.11)         LGE-131500-Mill Creek Unit 3 Access       (11,551,218.78)       (11,551,218.78)         LGE-131500-Mill Creek Unit 3 SO2 Ac       (3,313,867.93)       (3,313,867.93)         LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)       (15,048,710.72)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Mill Creek Unit 2 SO2 Ac       (5,128,383.11)       (5,128,383.11)         LGE-131500-Mill Creek Unit 3 Access       (11,551,218.78)       (11,551,218.78)         LGE-131500-Mill Creek Unit 3 SO2 Ac       (3,313,867.93)       (3,313,867.93)         LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)       (15,048,710.72)         LGE-131500-Mill Creek Unit 4 SO2 Ac       (5,712,368.74)       (5,712,368.74)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Mill Creek Unit 3 Access       (11,551,218.78)       (11,551,218.78)         LGE-131500-Mill Creek Unit 3 SO2 Ac       (3,313,867.93)       (3,313,867.93)         LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)       (15,048,710.72)         LGE-131500-Mill Creek Unit 4 SO2 Ac       (5,712,368.74)       (5,712,368.74)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Mill Creek Unit 3 SO2 Ac       (3,313,867.93)       (3,313,867.93)         LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)       (15,048,710.72)         LGE-131500-Mill Creek Unit 4 SO2 Ac       (5,712,368.74)       (5,712,368.74)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Trimble Unit 1 SO2 Acces       (2,267,775.64)       (2,267,775.64)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Mill Creek Unit 4 Access       (15,048,710.72)       (15,048,710.72)         LGE-131500-Mill Creek Unit 4 SO2 Ac       (5,712,368.74)       (5,712,368.74)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Trimble Unit 1 SO2 Acces       (2,267,775.64)       (2,267,775.64)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Mill Creek Unit 4 SO2 Ac       (5,712,368.74)       (5,712,368.74)         LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Trimble Unit 1 SO2 Acces       (2,267,775.64)       (2,267,775.64)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-TC 1 Future Use - 105       (6,096.69)       (6,096.69)         LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Trimble Unit 1 SO2 Acces       (2,267,775.64)       (2,267,775.64)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Trimble Unit 1 Accessory       (23,480,030.83)       (23,480,030.83)         LGE-131500-Trimble Unit 1 SO2 Acces       (2,267,775.64)       (2,267,775.64)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				and the second s
LGE-131500-Trimble Unit 1 SO2 Acces       (2,267,775.64)       (2,267,775.64)         LGE-131500-Accessory       (110,912,014.89)       (110,912,014.89)         LGE-131501-AROP Cane Run Unit 4 Accessor       (371,247.06)       (371,247.06)				
LGE-131500-Accessory (110,912,014.89) (110,912,014.89) LGE-131501-AROP Cane Run Unit 4 Accessor (371,247.06) (371,247.06)				
LGE-131501-AROP Cane Run Unit 4 Accessor (371,247.06) (371,247.06)				The state of the s
	LGE-131501-AROP Cane Run Unit 5 Accessor	(215,937.84)		(215,937.84)

LGE-131501-AROP Cane Run Unit 6 Accessor (732,962,19) (7,21,490.89) LGE-131501-AROP MC 1 Accessor (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,19) (732,962,10) (866,912,46) (866,912,46) (866,912,46) (866,912,46) (866,912,46) (866,912,46) (866,912,46) (866,912,46) (974,628,44		KY Balance	IN Balance	Total Balance
LGE-131501-AROP MC 1 Accessor		Balance	Dalance	balance
LGE-131501-AROP MC 1 Accessor       (732,962,19)       (732,962, LGE-131501-AROP MC 2 Accessor       (866,912,48)       (866,912, LGE-131501-AROP MC 3 Accessor       (1,132,148,56)       (1,132,148, LGE-131501-AROP MC 4 Accessor       (2,126,567,57)       (2,126,567, LGE-131501-AROP MC 4 Accessor       (974,628,34)       (974,628, LGE-131501-AROP TC 1 Accessor)       (7631,894,91)       (7,651,694,91)       (7,651,694,91)       (7,651,694,91)       (7,651,694,91)       (7,651,694,91)       (7,651,694,91)       (7,651,694,91)       (7,651,694,91)       (7,651,694,91)       (7,661,694,91) <td>LGE-131501-AROP Cane Run Unit 6 Accessor</td> <td>(1,211,490.89)</td> <td>stolera de jugaros ligalistas pres</td> <td>(1,211,490.89)</td>	LGE-131501-AROP Cane Run Unit 6 Accessor	(1,211,490.89)	stolera de jugaros ligalistas pres	(1,211,490.89)
LGE-131501-AROP MC 2 Accessor       (866,912,46)       (866,912,146)         LGE-131501-AROP MC 3 Accessor       (1,132,148,56)       (1,132,148,148,148)         LGE-131501-AROP MC 4 Accessor       (2,126,567,57)       (2,126,567,57)         LGE-131501-AROP TC 1 Accessor       (974,628,34)       (974,628,34)         LGE-131501-AROP Accessory       (7,631,894,94)       (7,631,894,108,134,108,108)         LGE-131600-Cane Run Unit 1 Misc. Po       (23,531,62)       (23,531,128,138,138,138,138,138,138,138,138,138,13	LGE-131501-AROP MC 1 Accessor			(732,962.19)
LGE-131501-AROP MC 4 Accessor         (2,126,567.57)         (2,126,567.57)           LGE-131501-AROP TC 1 Accessor         (974,628.34)         (974,628.34)           LGE-131600-Cane Run Unit 1 Misc. Po         (23,531.62)         (23,531.84)           LGE-131600-Cane Run Unit 1 Misc. Po         (12,867.86)         (12,867.86)           LGE-131600-Cane Run Unit 4 Misc. Po         (15,511.09)         (15,511.09)           LGE-131600-Cane Run Unit 4 SO2 Misc         (16,694.23)         (16,694.23)           LGE-131600-Cane Run Unit 5 Misc. Po         (31,566.75)         (31,566.15)           LGE-131600-Cane Run Unit 6 SO2 Misc         (72,517.07)         (72,517.10)           LGE-131600-Mill Creek Unit 1 Misc. Po         (466,440.76)         (466,440.76)           LGE-131600-Mill Creek Unit 2 Misc.         (91,31.44)         (91,31.44)           LGE-131600-Mill Creek Unit 4 Misc.         (2,435,375.64)         (2,435,375.64)           LGE-131600-Mill Creek Unit 4 Misc.         (2,435,375.64)         (2,435,375.64)           LGE-131600-Mill Creek Unit 4 Misc.         (5,971,730.68)	LGE-131501-AROP MC 2 Accessor	(866,912.46)		(866,912.46)
LGE-131501-AROP TC 1 Accessor         (974,628.34)         (974,628.4)           LGE-131501-AROP Accessory         (7,631,894.91)         (7,631,894.1)           LGE-131600-Cane Run Unit 1 Misc. Po         (23,531.62)         (23,531.1)           LGE-131600-Cane Run Unit 3 Misc. Po         (12,867.86)         (12,867.86)           LGE-131600-Cane Run Unit 4 Misc. Po         (15,511.09)         (15,511.10)           LGE-131600-Cane Run Unit 5 Misc. Po         (31,566.75)         (31,566.75)           LGE-131600-Cane Run Unit 5 Misc. Po         (31,566.75)         (31,566.75)           LGE-131600-Cane Run Unit 6 Misc. Po         (1,285,087.90)         (1,285,087.10)           LGE-131600-Cane Run Unit 6 SO2 Misc         (50,277.52)         (50,277.10)           LGE-131600-Mill Creek Unit 1 Misc P         (466,440.76)         (466,440.76)           LGE-131600-Mill Creek Unit 2 Misc.         (91,131.44)         (91,131.10)           LGE-131600-Mill Creek Unit 4 Misc.         (2,435,375.64)         (2,435,375.64)           LGE-131600-Mill Creek Unit 4 Misc.         (2,435,375.64)         (2,435,375.64)           LGE-131600-Mill Creek Unit 4 Misc.         (2,435,375.64)         (2,435,375.64)           LGE-131600-Mill Creek Unit 4 Misc.         (3,6151.28)         (5,971,730.68)           LGE-131600-Mill Creek Unit 4 Misc.         (3,6151.	LGE-131501-AROP MC 3 Accessor	(1,132,148.56)		(1,132,148.56)
LGE-131501-AROP Accessory       (7,631,894.91)       (7,631,894.91)       (7,631,894.1)         LGE-131600-Cane Run Unit 1 Misc. Po       (23,531,62)       (23,531.1)         LGE-131600-Cane Run Unit 3 Misc. Po       (12,867.86)       (12,867.10)         LGE-131600-Cane Run Unit 4 Misc. Po       (15,511.09)       (15,511.10)         LGE-131600-Cane Run Unit 5 Misc. Po       (31,566.75)       (31,666.694.23)         LGE-131600-Cane Run Unit 5 SO2 Misc       (72,517.07)       (72,517.07)         LGE-131600-Cane Run Unit 6 Misc. Po       (1,285,087.90)       (1,285,087.90)         LGE-131600-Cane Run Unit 6 Misc. Po       (1,285,087.90)       (1,285,087.10)         LGE-131600-Mill Creek Unit 1 Misc. Po       (466,440.76)       (466,440.76)         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.40)         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.64)         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.28)         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.64)         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.28)         LGE-131600-Mill Creek Unit 4 SO2 Mi       (5,971,730.68)       (5,971,730.68)         LGE-131600-Mills. Power Plant       (5,971,730.68)       (5,971,730.68)	LGE-131501-AROP MC 4 Accessor	(2,126,567.57)	•	(2,126,567.57)
LGE-131600-Cane Run Unit 1 Misc. Po       (23,531.62)       (23,531.         LGE-131600-Cane Run Unit 3 Misc. Po       (12,867.86)       (12,867.         LGE-131600-Cane Run Unit 4 Misc. Po       (15,511.09)       (15,511.         LGE-131600-Cane Run Unit 5 Misc. Po       (31,566.75)       (31,566.         LGE-131600-Cane Run Unit 5 Misc. Po       (31,566.75)       (31,566.         LGE-131600-Cane Run Unit 6 Misc. Po       (1,285,087.90)       (1,285,087.00)         LGE-131600-Cane Run Unit 6 SO2 Misc       (50,277.52)       (50,277.         LGE-131600-Mill Creek Unit 1 Misc. Po       (466,440.76)       (466,440.76)         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.04)         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.64)         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.64)         LGE-131600-Mill Creek Unit 4 Misc. Pow       (1,120,207.48)       (36,151.         LGE-131600-Mill Creek Unit 4 Misc. Pow       (1,120,207.48)       (5,971,730.68)         LGE-131600-Mill Creek Unit 4 Misc. Pow       (1,102,476,857.32)       (1,102,476,857.32)         LGE-131600-Mill Creek Unit 4 Misc. Pow       (1,102,476,857.32)       (1,102,476,857.32)      <	LGE-131501-AROP TC 1 Accessor	(974,628.34)	•	(974,628.34)
LGE-131600-Cane Run Unit 3 Misc. Po         (12,867.86)         (12,867.86)           LGE-131600-Cane Run Unit 4 Misc. Po         (15,511.09)         (15,511.           LGE-131600-Cane Run Unit 4 SO2 Misc         (16,694.23)         (16,694.23)           LGE-131600-Cane Run Unit 5 Misc. Po         (31,566.75)         (31,566.25)           LGE-131600-Cane Run Unit 5 SO2 Misc         (72,517.07)         (72,517.           LGE-131600-Cane Run Unit 6 Misc. Po         (1,285,087.90)         (1,285,087.00)           LGE-131600-Mill Creek Unit 6 SO2 Misc         (50,277.52)         (50,277.           LGE-131600-Mill Creek Unit 2 Misc.         (91,131.44)         (91,131.42)           LGE-131600-Mill Creek Unit 2 Misc.         (314,370.04)         (314,370.04)           LGE-131600-Mill Creek Unit 4 Misc.         (2,435,375.64)         (2,435,375.64)           LGE-131600-Mill Creek Unit 4 Misc.         (2,435,375.64)         (2,435,375.64)           LGE-131600-Mill Creek Unit 4 Misc. Pow         (1,120,207.48)         (36,151.28)           LGE-131600-Trimble Unit 1 Misc. Pow         (1,120,207.48)         (5,971,730.68)           LGE-131600-Misc. Power Plant         (5,971,730.68)         (5,971,730.68)           LGE-135010-Electric Transmission -         (204,061.94)         (204,061.94)           LGE-135010-Electric Transmission -	LGE-131501-AROP Accessory	(7,631,894.91)		(7,631,894.91)
LGE-131600-Cane Run Unit 4 Misc. Po LGE-131600-Cane Run Unit 4 SO2 Misc LGE-131600-Cane Run Unit 5 Misc. Po LGE-131600-Cane Run Unit 5 Misc. Po LGE-131600-Cane Run Unit 5 Misc. Po LGE-131600-Cane Run Unit 5 SO2 Misc LGE-131600-Cane Run Unit 6 Misc. Po LGE-131600-Cane Run Unit 6 Misc. Po LGE-131600-Cane Run Unit 6 Misc. Po LGE-131600-Mill Creek Unit 1 Misc P LGE-131600-Mill Creek Unit 1 Misc P LGE-131600-Mill Creek Unit 2 Misc. LGE-131600-Mill Creek Unit 2 Misc. LGE-131600-Mill Creek Unit 2 Misc. LGE-131600-Mill Creek Unit 4 Misc. LGE-131600-Mill Creek Unit 1 Misc. LGE-131600-Mill Creek Unit 4 Misc. LGE-131600-Mill Creek Unit 5 Misc. LGE-131600-Mill Creek Unit 6 Misc. LGE-1		(23,531.62)	nenganen militari dir. berit birak ile	(23,531.62)
LGE-131600-Cane Run Unit 4 SO2 Misc       (16,694.23)       (16,694.23)         LGE-131600-Cane Run Unit 5 Misc. Po       (31,566.75)       (31,566.         LGE-131600-Cane Run Unit 5 SO2 Misc       (72,517.07)       (72,517.         LGE-131600-Cane Run Unit 6 Misc. Po       (1,285,087.90)       (1,285,087.         LGE-131600-Mill Creek Unit 6 SO2 Misc       (50,277.52)       (50,277.52)         LGE-131600-Mill Creek Unit 1 Misc P       (466,440.76)       (466,440.         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.04)       (314,370.04)         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.28)         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.48)         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.68)         LGE-135010-Electric Transmission       (204,061.94)       (204,061.94)         LGE-135510-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54) <td>LGE-131600-Cane Run Unit 3 Misc. Po</td> <td>(12,867.86)</td> <td></td> <td>(12,867.86)</td>	LGE-131600-Cane Run Unit 3 Misc. Po	(12,867.86)		(12,867.86)
LGE-131600-Cane Run Unit 5 Misc. Po       (31,566.75)       (31,566.         LGE-131600-Cane Run Unit 5 SO2 Misc       (72,517.07)       (72,517.         LGE-131600-Cane Run Unit 6 Misc. Po       (1,285,087.90)       (1,285,087.         LGE-131600-Cane Run Unit 6 SO2 Misc       (50,277.52)       (50,277.         LGE-131600-Mill Creek Unit 1 Misc P       (466,440.76)       (466,440.         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (36,151.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         LGE-135010-Electric Transmission -       (1,102,476,857.32)       (1,102,476,857.         Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,36	LGE-131600-Cane Run Unit 4 Misc. Po	(15,511.09)		(15,511.09)
LGE-131600-Cane Run Unit 5 SO2 Misc       (72,517.07)       (72,517.         LGE-131600-Cane Run Unit 6 Misc. Po       (1,285,087.90)       (1,285,087.         LGE-131600-Cane Run Unit 6 SO2 Misc       (50,277.52)       (50,277.         LGE-131600-Mill Creek Unit 1 Misc P       (466,440.76)       (466,440.         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         LGE-135010-Electric Transmission       (1,102,476,857.32)       (1,102,476,857.         Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)       (67,361.54)         LGE-135210-TC Unit 1 - Trans Sub       (54.97) <td>LGE-131600-Cane Run Unit 4 SO2 Misc</td> <td>(16,694.23)</td> <td></td> <td>(16,694.23)</td>	LGE-131600-Cane Run Unit 4 SO2 Misc	(16,694.23)		(16,694.23)
LGE-131600-Cane Run Unit 6 Misc. Po       (1,285,087.90)       (1,285,087.90)         LGE-131600-Cane Run Unit 6 SO2 Misc       (50,277.52)       (50,277.52)         LGE-131600-Mill Creek Unit 1 Misc P       (466,440.76)       (466,440.76)         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.14)         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.04)         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.64)         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.28)         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.48)         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.68)         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         LGE-135010-Electric Transmission       (1,705,463.51)       (261,421.09)       (1,966,884.16)         LGE-135020-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,359,110.16)         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)       (67,361.54)         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.421.09)       (54.421.09)       (54.421.09)       (54.421.09)       (54.421.09)       (67,361.16)	LGE-131600-Cane Run Unit 5 Misc. Po	(31,566.75)		(31,566.75)
LGE-131600-Cane Run Unit 6 SO2 Misc       (50,277.52)       (50,277.         LGE-131600-Mill Creek Unit 1 Misc P       (466,440.76)       (466,440.         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.         CGE-135010-Electric Transmission       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135020-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,359,110.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.	LGE-131600-Cane Run Unit 5 SO2 Misc	(72,517.07)	en e	(72,517.07)
LGE-131600-Mill Creek Unit 1 Misc P       (466,440.76)       (466,440.         LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.         Electric Transmission       (1,102,476,857.32)       (1,102,476,857.         Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135010-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.87)	LGE-131600-Cane Run Unit 6 Misc. Po	(1,285,087.90)		(1,285,087.90)
LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.41)         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         LGE-135010-Electric Transmission       (1,102,476,857.32)       (1,102,476,857.         LGE-135020-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.87)	LGE-131600-Cane Run Unit 6 SO2 Misc	(50,277.52)	•	(50,277.52)
LGE-131600-Mill Creek Unit 2 Misc.       (91,131.44)       (91,131.41)         LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         LGE-135010-Electric Transmission       (1,102,476,857.32)       (1,102,476,857.         LGE-135020-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.87)	LGE-131600-Mill Creek Unit 1 Misc P	(466,440.76)		(466,440.76)
LGE-131600-Mill Creek Unit 3 Misc.       (314,370.04)       (314,370.         LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         LGE-135010-Electric Transmission       (1,102,476,857.32)       (1,102,476,857.         LGE-135010-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.20.20)	LGE-131600-Mill Creek Unit 2 Misc.	(91,131.44)		(91,131,44)
LGE-131600-Mill Creek Unit 4 Misc.       (2,435,375.64)       (2,435,375.64)         LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         (1,102,476,857.32)       (1,102,476,857.32)       (1,102,476,857.32)         Electric Transmission       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135010-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.	LGE-131600-Mill Creek Unit 3 Misc.	(314,370.04)		(314,370.04)
LGE-131600-Mill Creek Unit 4 SO2 Mi       (36,151.28)       (36,151.28)         LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.48)         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.68)         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         Electric Transmission       (1,102,476,857.32)       (1,102,476,857.32)         LGE-135010-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.135.10)         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.135.10)         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.97)	LGE-131600-Mill Creek Unit 4 Misc.			(2,435,375.64)
LGE-131600-Trimble Unit 1 Misc. Pow       (1,120,207.48)       (1,120,207.48)         LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         Electric Transmission       (1,102,476,857.32)       (1,102,476,857.32)         LGE-135010-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.135.02)         LGE-135020-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.135.02)         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.97)	LGE-131600-Mill Creek Unit 4 SO2 Mi			(36,151.28)
LGE-131600-Misc. Power Plant       (5,971,730.68)       (5,971,730.         LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.         Electric Transmission         LGE-135010-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135020-Electric Transmission -       -       -       -         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.	LGE-131600-Trimble Unit 1 Misc. Pow			(1,120,207.48)
LGE-131707-ARO Cost Steam (Eqp)       (204,061.94)       (204,061.94)         (1,102,476,857.32)       (1,102,476,857.32)         Electric Transmission       -         LGE-135010-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.100)         LGE-135020-Electric Transmission -       -       -       -       -         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.10)       -         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)       (54.97)	LGE-131600-Misc. Power Plant			(5,971,730.68)
Color	LGE-131707-ARO Cost Steam (Egp)			(204,061.94)
Electric Transmission         LGE-135010-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.05)         LGE-135020-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.05)         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.97)				(1,102,476,857.32)
LGE-135010-Electric Transmission -       (1,705,463.51)       (261,421.09)       (1,966,884.         LGE-135020-Electric Transmission -       -       -       -         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.97)		, , , , , , , , , , , , , , , , , , , ,		-
LGE-135020-Electric Transmission -       -       -         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.10)         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)       (54.97)       (54.97)	Electric Transmission			<u></u>
LGE-135020-Electric Transmission -       -       -         LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.10)         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)       (54.97)       (54.97)	LGE-135010-Electric Transmission -	(1,705,463,51)	(261,421,09)	(1,966,884.60)
LGE-135210-Electric Transmission -       (1,139,118.39)       (219,991.89)       (1,359,110.10)         LGE-135210-TC Sw. Station - Substat       (67,361.54)       (67,361.54)       (67,361.54)         LGE-135210-TC Unit 1 - Trans Sub       (54.97)       (54.97)	LGE-135020-Electric Transmission -		(-11,1-11,	(1,111,111,111,111,111,111,111,111,111,
LGE-135210-TC Sw. Station - Substat (67,361.54) (67,361.54) LGE-135210-TC Unit 1 - Trans Sub (54.97) (54.97)		(1.139.118.39)	(219.991.89)	(1,359,110.28)
LGE-135210-TC Unit 1 - Trans Sub (54.97) (54.97)		· · · · · · · · · · · · · · · · · · ·	(,)	(67,361.54)
		• · · · •		(54.97)
	LGE-135310-Electric Transmission -	(61,827,919.47)	(7,153,900.23)	(68,981,819.70)
			(.,,)	(5,897.17)

	KY Balance	IN Balance	Total Balance
LGE-135310-TC Unit 1 - Trans Sub LGE-135311-AROP Station Equip LGE-135311-AROP TC1 Station Equip LGE-135400-Electric Transmission - LGE-135500-Electric Transmission - LGE-135600-Electric Transmission - LGE-135700-Electric Transmission - LGE-135800-Electric Transmission - LGE-135915-ARO Cost Transm (L/B) LGE-135917-ARO Cost Transm (Eqp)	(501.17) (1,975.03) (637.73) (17,524,493.98) (16,056,160.47) (20,644,950.75) (572,847.54) (1,992,169.22) (41.40)	(4,482,843.60) (975,026.26) (2,850,958.85)	(501.17) (1,975.03) (637.73) (22,007,337.58) (17,031,186.73) (23,495,909.60) (572,847.54) (1,992,169.22) (41.40)
<b>\                                    </b>	(121,539,592.34)	(15,944,141.92)	(137,483,734.26)
Total Electric Depreciation Reserves	(1,714,377,749.45)	(15,944,141.92)	(1,730,321,891.37)
Electric Intangible Plant LGE-130100-Elect. Intagible Plant - LGE-130200-Franchises and Consents	(100.00) (100.00)		(100.00) (100.00)
Total Electric Amortization Reserves	(100.00)		(100.00)

	KY Balance	IN Balance	Total Balance
Gas Distribution			
LGE-237412-Gas Distribution Land	_		_
LGE-237422-Gas Distribution Land Ri	(77,380.41)		(77,380.41)
LGE-237510-Gas Distribution - City	(140,372.16)		(140,372.16)
LGE-237520-Gas Distribution - Other	(151,960.81)		(151,960.81)
LGE-237600-Gas Distribution - Mains	(106,484,418.72)		(106,484,418.72)
LGE-237800-Gas Distribution - Measu	(2,606,919.28)		(2,606,919.28)
LGE-237900-Gas Distribution - City	(1,641,638.08)		(1,641,638.08)
LGE-238000-Gas Distribution - Gas S	(63,826,934.60)		(63,826,934.60)
LGE-238100-Meters	(6,147,387.57)		(6,147,387.57)
LGE-238300-Regulators	(481,888.98)		(481,888.98)
LGE-238500-Gas Distribution - Indus	(90,339.31)		(90,339.31)
LGE-238700-Gas Distribution - Other	(17,927.70)		(17,927.70)
LGE-238805-ARO Cost Gas Dist (L/B)	(16.49)		(17,927.70)
LGE-238807-ARO Cost Gas Dist (Egp)	(49,718.44)		(49,718.44)
EGE-230007-ANO COSt Gas Dist (Eqp)	(181,716,902.55)		(181,716,902.55)
Gas General Plant			
LGE-239210-Transportation Equip-Car	(1,729,426.89)		(1,729,426.89)
LGE-239220-Transportation Equip-Tra	(193,391.91)		(193,391.91)
LGE-239400-Tools, Shop, and Garage	(1,746,389.37)		(1,746,389.37)
LGE-239500-Laboratory Equipment	-		-
LGE-239610-Power Op Equip-Hourly Ra	(2,371,373.10)		(2,371,373.10)
LGE-239620-Power Op Equip - Other	(33,259.58)		(33,259.58)
	(6,073,840.85)		(6,073,840.85)
Gas Storage			
LGE-235010-Gas Storage Underground	-		<u></u>
LGE-235020-Gas Storage Underground	(70,451.45)		(70,451.45)
LGE-235120-Gas Storage Undg Comp	(895,910.24)		(895,910.24)
LGE-235130-Gas Storage Undg Regu	(14,636.49)		(14,636.49)

	KY	IN	Total
	Balance	Balance	Balance
LGE-235140-Gas Storage Underground	(745,762.87)	(67,541.73)	(813,304.60)
LGE-235210-Gas Storage Undg Leas	(569,589.96)	(,,-	(569,589,96)
LGE-235220-Gas Storage Underground	(452,027.29)		(452,027.29)
LGE-235230-Gas Storage Undg Non	(7,683,607.10)		(7,683,607.10)
LGE-235240-Gas Storage Underground	(2,295,088.96)	(295,082.07)	(2,590,171.03)
LGE-235250-AROP Gas Storage Underground	(494,643.48)	(204,975.61)	(699,619.09)
LGE-235255-Gas Storage Underground	122,644.28	(79,719.13)	42,925.15
LGE-235300-Gas Storage Undergroun	(6,768,797.06)	(511,276.55)	(7,280,073.61)
LGE-235400-Gas Storage Undg Comp	(4,468,675.27)	,	(4,468,675.27)
LGE-235500-Gas Storage Undg Meas	(276,726.99)		(276,726.99)
LGE-235600-Gas Storage Undg Puri	(5,095,927.81)		(5,095,927.81)
LGE-235700-Gas Storage Underground	(278,478.74)	(42,511.83)	(320,990.57)
LGE-235805-ARO Cost Gas UG Store (L	(153.13)	, ,	(153.13)
LGE-235807-ARO Cost Gas UG Store (E	(39,312.97)		(39,312.97)
	(30,027,145.53)	(1,201,106.92)	(31,228,252.45)

	KY Balance	IN Balance	Total Balance
Gas Transmission			
LGE-236520-Gas Transmission Rights	(208,241.67)		(208,241.67)
LGE-236700-Gas Transmission - Mains	(12,039,254.49)		(12,039,254.49)
	(12,247,496.16)		(12,247,496.16)
Total Gas Depreciation Reserves	(230,065,385.09)	(1,201,106.92)	(231,266,492.01)
Gas Intangible Plant			
LGE-230200-Franchises and Consents	(800.00)		(800.008)
	(800.00)		(800.00)
T.110 A 17 17 B	(000.00)		
Total Gas Amortization Reserves	(800.00)		(800.00)
Common General Plant			
LGE-338910-Common - Land	_		
LGE-338920-Common - Land Rights	(128,904.90)		(128,904.90)
LGE-339010-Common Structures - Broa	(10,391,006.37)		(10,391,006.37)
LGE-339010-Common Structures - Gene	(5,914,604.14)		(5,914,604.14)
LGE-339010-Struct and Imp-LGE Bidg	(1,439,151.29)		(1,439,151.29)
LGE-339020-Common Structures - Tran	556,716.16		556,716.16
LGE-339030-Common Structures - Stor	(7,444,731.94)		(7,444,731.94)
LGE-339040-Common Structures - Othe	(163,954.73)		(163,954.73)
LGE-339060-Common Structures - Micr	(220,809.62)		(220,809.62)
LGE-339110-Office Furniture	(6,642,123.27)		(6,642,123.27)
LGE-339120-Office Equipment	(2,169,148.74)		(2,169,148.74)
LGE-339130-Computer Equipment	(12,520,156.68)		(12,520,156.68)
LGE-339131-Personal Computers	(1,809,200.64)		(1,809,200.64)
LGE-339140-Security Equipment	(1,398,872.10)		(1,398,872.10)

	KY Balance	IN Balance	Total Balance
LGE-339210-Trans Equip-Cars and Tru LGE-339220-Trans Equip-Trailers LGE-339300-Stores Equipment LGE-339400-Tools, Shop, Garage Equi LGE-339500-Laboratory Equipment LGE-339610-Power Op Equip-Hourly Ra LGE-339620-Power Op Equip - Other LGE-339700-Common - Communication E LGE-339710-Communication Equip-Comp LGE-339800-Miscellaneous Equipment LGE-339915-ARO Cost Common (L/B)	(101,702.26) (26,448.51) (597,209.94) (1,265,933.33) 0.00 (233,967.19) (8,719.37) (18,935,480.84) (5,749,900.01) (566,188.81) (343.19) (77,171,841.71)	(502,034.50)	(101,702.26) (26,448.51) (597,209.94) (1,265,933.33) 0.00 (233,967.19) (8,719.37) (19,437,515.34) (5,749,900.01) (566,188.81) (343.19) (77,673,876.21)
Non-Utility Property LGE-312101-Nonutility Prop - Coal L LGE-312103-Nonutility-Coal Rts of W LGE-312104-Nonutility Prop - Misc L LGE-312102-Nonutility-Coal Mineral	(249.93) - (63,110.43) (63,360.36)		(249,93) - (63,110,43) (63,360,36)
Total Common Depreciation Reserves	(77,235,202.07)	(502,034.50)	(77,737,236.57)

	KY Balance	IN Balance	Total Balance
Common Intangible Plant LGE-330100-Common Intangible Plant LGE-330200-Franchises and Consents LGE-330300-Misc Intang Plant-Softwa LGE-330310-CCS Software LGE-330320-Law Library	(4,200.00) (9,309,277.51) (6,992,913.09) (16,306,390.60)		(4,200.00) (9,309,277.51) (6,992,913.09) 
Total Common Amortization Reserves	(16,306,390.60)	<u>-</u>	(16,306,390.60)
TOTAL RESERVES	(2,037,985,627.21)	(17,647,283.34)	(2,055,632,910.55)

### Louisville gas & electric company reserve for depreciation and amortization of electric plant in service - kentucky - financial accounting $\# REF \|$

	Beginning Balance	Accruals	Retirements	Transfers/ Adjustments	RWIP Transfers Out	Cost of Removal	Satvage	Other Credits	Ending Balance
Electric Distribution									
LGE-130020-Elect Dist. Substation	_	_	-	_	_	-	-	_	-
LGE-136025-Elect, Dist, Substation	_	-	-	-	-	-	-		-
LGE-136100-Electric Distribution Su	(1,905,781,24)	(34,829.79)	5,399,39	_		13,863.91	-	-	(1,921,347,73)
LGE-136200- KY Elect. Dist. Substation	(36,537,246.01)	(922,279.45)	100,421,18		-	114,943.01	-	_	(37,244,161.27)
LGE-136205-Elect. Dist. Substation	-	-	-	*	•	-	-	-	-
LGE-136400-Electric Distribution -	(66,433,271.02)	(3,807,305.88)	1,151,011.05	-	-	2,155,537,98	(10,659,15)	-	(66,944,686.12)
LGE-138500-Electric Distribution -	(89,442,414.26)	(6,310,914.09)	2,089,939,79	. •	-	2,163,476.73	(31,711,79)	-	(91,531,623,62)
LGE-138600-Electric Distribution -	(25,300,815,67)	(861,550.24)	133,387.59	(43.92)	•	483,415,52	(10,169.04)	•	(25,555,775,76)
LGE-136700-Electric Distribution -	(45,849,599.81)	(2,284,748.23)	1,179,733,24	43.92	-	449,798,84	(7,785,75)	•	(46,512,557.79)
LGE-136800-Line Transformers	(57,728,977.79)	(2,866,860.66)	190,083.01	•	-	240,110.22	(125,183.19)	•	(60,280,828,41)
LGE-138910-Electric Distribution -	(1,669,863.39)	(138,662,46)	22,543,84	-	•	160,033,12	-		(1,625,948,89)
LGE-138920-Ejectric Distribution -	(17,935,035,56)	(1,054,088.54)	63,113.58	-	•	127,293.88	-	-	(18,798,716,66)
LGE-137000-Motors	(17,208,835,52)	(1,376,182,05)	75,697.63	•	-	2,269,681,57	(2.040.00)	•	(18,509,319,94)
LGE-137310-Electric Distribution -	(18,209,882.52)	(963,913,96)	929,572,75	•		352,671,67	(3,610.89)	-	(15,978,153.05)
LGE-137320-Electric Distribution - LGE-137340-Electric Dist Street	(20,278,312,38) (89,350,62)	(1,391,893,68)	80,771.92 87.546.43	-	•	59,363.99	(1,761,11) (96,556,53)		(21,238,523.58) (38,996,73)
LGE-137340-Electric Dist Street LGE-137405-ARO Cost Elec Dist (L/B)		(2.597.86)	67,040,43	14.504.04	•	38,303.88	(80,000.00)	-	(1,256,54)
EGE-137405-ARO COR EJOC DIRT(DIS)	(398,602,548,51)	(22,005,826,89)	6,109,222,30	14,504,04		8,590,190,42	(287,437.45)		(406,181,896,09)
	(396,502,546,51)	(XX,000,0X0,08)	0, 109,222,30	14,004,04	-	0,500,190.42	(207,437.43)	•	(400,101,000,001)
Electric General Plant									
LGE-139210-Transportation - Cars Tr	(9,015,691,64)	(63,559.93)	276,315,95	(376.55)	_			_	(8,803,312,17)
LGE-139220-Transportation - Traile	(229,798,60)	(22,178,89)	270(010:00	(0.0.00)		_		_	(251,977,49)
LGE-139400-Tools, Shop, and Garage	(1.168,383,97)	(153,287.55)	2,121.07	(125,303,36)		_			(1,444,853,81)
LGE-139500-Laboratory Equipment	(1,300,131,25)	(321,323,46)	1,496,151,35	125,303,36	_			_	0.00
LGE-139610-Power Op Equip-Hourly Rt	(2,269,437,40)	(28,182.15)	56,702.98		_	_			(2,240,916,57)
LGE-139620-Power Op Equip-Other	(25.110.96)	(1,715.30)	-	-	_			-	(26,826,26)
	(14,008,553,82)	(590,247,28)	1,831,291,35	(376.55)	-	-	-	-	(12,767,886,30)
Electric Hydro Production									
LGE-133020-Ohio Falls Non-Project	-	-	-	-	-		-	-	-
LGE-133020-Ohio Falls Project 289	<del>-</del>		-	-	•	•	-	-	
LGE-133100-Ohio Falls Non-Project	(38,169,99)	(348.72)	-	-	-	-	-	-	(38,518.71)
LGE-133100-Ohlo Falls Project 289	(4,260,298.62)	(3,768.24)	-	-	-	•	-	-	(4,264,066,86)
LGE-133200-Ohio Falls Project 289 LGE-133300-Ohio Falls Project 289	(1,098,224.57)	(378,218.28) (49,005,96)	-	-	•	•	•	-	(1,476,442,85) (956,211,59)
	(907,205,63)	(159,162.84)	•	=	-	•	•	-	(1,803,592,25)
LGE-133400-Ohio Falls Project 289 LGE-133500-Ohio Falls Non-Project	(1,644,429.41) (2,897.00)	(409.92)	•	-	•	•	-	-	(3,306,92)
LGE-133500-Onto Falls Project 289	(38,289,74)	(6,495.66)		•	•		-		(44,785,40)
LGE-133600-Onlo Falls Non-Project	(872,13)	(0,483.00)	-					_	(872.13)
LGE-133600-Ohlo Falis Project 289	(16,934.08)	-	-	-	_	-		-	(16,934,08)
LCE-133707-ARO Cost Hydro Prod (Eco	(17,810,24)	(482.28)	-	17.928.42	-		•		(364.10)
COD-190101-440 Gest Halo - Jee (Edb	(8,025,131,41)	(597,891.90)	-	17,928,42					(8,605,094,89)
	(0,020,101.77)	,,		11,020112					(-,,
Electric Other Production									
LGE-134020-TC 5 CT Land	_	-	-	-	-	-	-	-	-
LGE-134020-Waterside - Land	-		-	-		•	-		-
LGE-134100-Structures and Imp	(3,362,959.26)	(478,504,32)	-	•	-	-	-		(3,841,463.58)
LGE-134200-Fuel Holders, Prod	(1,964,978.66)	(231,730,66)	174,611,95	-		-	-		(2,022,097,37)
LGE-134300-Prime Movers	(28,889,842.27)	(6,876,332,71)	10,196,19	-	•	-	-	-	(34,755,976,79)
LGE-134400-Generators	(14,517,236.70)	(1,071,207.68)	-	•	-	-	=	-	(15,588,444,38)
LGE-134500-Accessory Electric	(4,748,138.88)	(677,687.73)	-	-	-	-	-	•	(5,425,828.61)
LGE-134600-Misc, Power Plant	(1,066,293,55)	(106,127,55)	-	-	-	-	-	-	(1,172,421.10)
LGE-134705-ARO Cost Other Prod (L/B	(837.12)	(315.91)	-	960.35	-	-	-	*	(192,68)
LGE-134707-ARO Cost Other Prod (Egp	(88,481.36)	(54,532.21)		143,013,57			····		(0,00)
	(54,638,767.80)	(8,496,438.77)	184,810.14	143,973.92	-	-	-	•	(62,806,422.51)

### LOUISVILLE GAS & ELECTRIC COMPANY RESERVE FOR DEPRECIATION AND AMORTIZATION OF ELECTRIC PLANT IN SERVICE - KENTUCKY - FINANCIAL ACCOUNTING REFERENCE.

	Beginning Relance	Accruals	Retirements	Transfers/ Adjustments	RWIP Transfers Out	Cost of Removal	Salvego	Other Credits	Ending Balanco	
Electric Steam Production										
LGE-131020-Steam Production - Land LGE-131100-Cane Run Unit 1 Structur	(5,048,304.93)				ender van Fransis	eta eta errorada	— PS 1990 1990 1994 1994 1995 1995 1995 1995 1995 1995	<del>-</del>	(5,048,304,93)	and the second transplant to the second
LGE-131100-Cane Run Unit 2 Structur	(2,106,202,77)	는 영화 기업 이 수의 이 급하실 수 한 분들은 기계를 보고 있다.		Mississi (Paragon W.T. Rosk) Willey (Tiller Brand)					(2,106,202,77)	
LGE-131100-Cane Run Unit 3 Structur	(5,917,984.83)								(5,917,984,83)	
LGE-131100-Cone Run Unit 4 SO2-Stru LGE-131100-Cone Run Unit 4 Structur	(1,714,405.60) (4,579,270.72)	(7,223.40) (43,563.48)							(1,721,629.00) (4,622,834,20)	일본 200 HOLD - 100 HOLD 2012 1993 1993 1993 1993 1993 1993 1993 19
LGE-131100-Cane Run Unit 5 SO2-Stru	(2,300.698.19)	(26,464.44)							(2,327,082.63)	
LGE-131100-Cane Run Unit 5 Structur	(6,041,364.90)	(120,861.32)	12,303.83						(6,149,922,39)	
LGE-131100-Cane Run Unit 6 SO2-Stru LGE-131100-Cane Run Unit 6 Structur	(2,124,011,35)	(40,887.84) (447,944,47)	2.391.83			52,853,34			(2,164,899.19) (13,283,279,44)	
LGE-131100-MIII Creek Unit 1 SO2-St	(1,918,060,16)	(28.210.20)				-			(1,946,270,36)	[12] [12] 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10
LGE-131100-Mill Creek Unit 1 Struct	(16,878,344,06)	(315,919.61)	11,928,32	•	•	3,925.64	•	•	(17,178,409,71)	
LGE-131100-Mill Croek Unit 2 SO2-St LGE-131100-Mill Croek Unit 2 Struct	(1,579,281,24) (9,862,487,31)	(25,220,64) (153,661,36)	19,601,84	-	:	4,018.70		-	(1,604,501.88) (9,992,528.13)	
LGE-131100-Mill Creek Unit 3 SO2-St	(475,078.68)	(5,334,12)			grand Same				(480,413,00)	
LQE-131100-Mill Creek Unit 3 Struct LGE-131100-Mill Creek Unit 4 SO2-St	(20,647,391,35) (4,797,577,87)	(367,218,77) (93,817,68)	105,976,30			27,466.05			(20,881,186.87)	
LOE-131100-Mill Creek Unit 4 Struct	(36,035,876.82)	(1,057,631,59)	14,570,81			1,895,48			(4,891,395.55) (37,077,042.12)	
LGE-131100-TC 1 Future Use - 105	(10,796,18)	(464.76)		englija i ji Gravengi			n kalifa palen bara		(11,260.94)	
LGE-131100-Trimble Unit 1 SO2-Struc LGE-131100-Trimble Unit 1 Structure	(344,326,31) (54,500,008,57)	(11,261.16) (2,295,257,28)	9.265.40						(355,586,47) (56,786,000,45)	
LGE-131100-Structures & Imp	(189,771,951,18)	(5,040,942,12)	176,038,33			90,160,11	•	en de neze en <del>a</del> lengarie	(194,546,694,86)	4 - 424 - 21 - 41 2 - 41 4 2 5 - 41 4 1 1 1 1 1 1 1 1 1 2 1 4 2 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
LGE-131101-AROP CR 1 Struct & Impr	(6,430,86)					the company of the second			(5,430.86)	
LGE-131101-AROP CR 6 Struct & Impr LGE-131101-AROP MC 1 Struct & Impr	(2,119,913,41) (140,873,72)	(47,262.96) (1,972.60)					845/31 <u>*</u> 1266		(2,167,176.37) (142,646.52)	
LGE-131101-ARQP MC 3 Struct & Impr	(610,991.53)	(11,250.12)					angi mini papan		(622,241,65)	1992년 12 10 2 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
LGE-131101-AROP MC 4 Struct & Impr	(3,481,068.66)	(105,886.52)	-		•	· · · · · ·			(3,587,955,18)	
LGE-131101-AROP TC 1 Struct & Impr LGE-131101-AROP Struct & Impr	(2,405,552,45) (8,783,830,63)	(83,868,36) (251,240,76)	:	•	-	•			(2,489,420,81) (9,015,071,39)	British de Belgelouse.
LOE-131110-CR 6 Capital Leased Equi	(1,097,40)	(10.112.40,10)	-	-		•		-	(1,097,40)	Experience restricted to the control of the control
LGE-131110-MC 4 Capital Leased Equi	(1,264.53)	-	-	•	-	•	-	-	(1,264,53)	r Par Park Bullium et unt
LGE-131110-CAPITAL LEASED EQUIP LGE-131200-Cane Run Locomotivas - B	(2,361.93) (52,811.12)	(1,376,40)		:	-	-			(2,361,93) (54,187,52)	num versavki genätiknen och
LGE-131200-Cane Run Rall Cars - Bot	(1,057,093.69)	(47,155,68)		•	•		•	-	(1,114,249,37)	
LGE-131200-Cane Run Unit 1 Boller P LGE-131200-Cane Run Unit 2 Boller P	(1,228,538.15) (152,754,79)				and a second of the second of			·	(1,228,538,15) (152,754,79)	
LGE-131200-Cane Run Unit 3 Boller P	(1.182.185.79)			ar jara dari 🗓 🖈		garaga pendagai si			(1,182,185,79)	
LOE-131200-Cane Run Unit 4 Boller P	(18,137,319.60)	(1,843,294,53)	50,613,86			3,271.84			(19,926,728.43)	
LGE-131200-Cane Run Unit 4 SO2 Boll LGE-131200-Cane Run Unit 5 Boller P	(17,908,891,77) (13,672,123,81)	(840,940.25) (2,469,055,92)	33,827,63 57,952,71			0,957,17 15,262,46			(18,709,047.02) (16,287,984,58)	
LGE-131200-Cane Run Unit 5 SO2 Beil	(27,962,984,43)	(1,144,169.04)	Mark services			Skolovál az aktorájá			(29,107,153,47)	
LGE-131200-Cane Run Unit 6 Boller P	(25,334,215,38) (25,586,349,29)	(2,792,851.49)	91,302,26			39,114,65			(27,996,640.96)	
LGE-131200-Cane Run Unit 6 SO2 Boil LGE-131200-MC Offsite Rell Cars	(522,111.39)	(1,443,536.64) (1,910.47)	524,021,88						(27,029,885.93)	[문화]
LGE-131200-MIII Creek Locomotives B	(454,612.87)	(17,789.28)				en e			(472,402.15)	
LGE-131200-MR Croek Roll Cars Boi LGE-131200-MR Croek Unit 1 Bollor	(2,028,497,14) (30,701,618,81)	(92,804,88) (2,264,436,07)	192,499,46	•		12,132,67			(2,121,302.02) (32,761,422.75)	항송 살게 된다는 그 나는 사람이 아니라 모양하셨다.
LGE-131200-Mill Crook Unit 1 SO2 Bo	(28,736,579,92)	(1,980,134.32)	49,064.38			9,501,82	-		(30,638,148,04)	
LGE-131200-Mill Crock Unit 2 Boller	(22,385,596,19)	(2,490,509,75)	86,055.72	-	-	32,912,99	. *	•	(24,757,137,23)	
LQE-131200-MII Crock Unit 2 SO2 Be LQE-131200-MII Crock Unit 3 Bollor	(25,739,681,79) (59,021,210,25)	(1,523,762,23) (5,505,477,28)	281,131.38 133,468,10	-	- :	77,250,00 27,555,66		-	(26,905,082,64) (64,385,663,77)	
LOE-131200-Mill Creek Unit 3 SO2 Bo	(31,259,617,48)	(2,433,142,44)		-	-	-			(33,692,759,92)	
LGE-131200-Mill Crook Unit 4 Bollor LGE-131200-Mill Crook Unit 4 SO2 Bo	(89,670,157.34) (88,976,766.66)	(9,556,164.10) (4,237,231.72)	932,760.50 224,882.88		-	149,538,64 22,660,00	(45,461.74)		(98,189,484,04) (72,968,455,50)	
LGE-131200-TC 1 Futue Use - 105	(488,82)	(106,56)	224,002.00	-		22,000.00		in seed of	(595,38)	
LOS-131200-Trimble Unit 1 Boilor PI	(87,009,941,47)	(7,650,954,38)	1,329,552,71	;•		201,726,43			(73,129,616.71)	
LGE-131200-Trimble Unit 1 SQ2 Bolle LGE-131200-Boller	(41,970,651,71) (600,962,799,66)	(2,302,314.60) (50,619,118.03)	3,987,133,66	ing and the second of the		597,884,33	(45,481.74)	and the string called	(44,272,966.31) (647,042,361.45)	and the state of t
LGE-131201-AROP MC3 Boller Pit Equp	(225,500,91)	(8,745.60)	0,001,100,00	Mark Bergarian	rada (Kabapa Kalaba)	-27 (47 (247), a part • 11 (27),	*	statistica (n. 1881).	(234,246.51)	
LGE-131201-AROP MC4 SQ2 Boiler Pit	(327,677.64)	(9,843,48)	i şiləkiyi afis⊬asiç		dediki barbakere et		Padawaya • faliki		(337,521.12)	는 보다 있는 사람들은 사람들이 있는데 보는 다른 사람들이 되었다.
LGE-131201-AROP Boiler Pit LGE-131400-Cane Run Unit 1 Turbogen	(553,178.55) (158,076,86)	(18,589.08)	พหาสาร จัดเกรเซ <mark>ลร</mark> ์ (พ.ศ.)	ana is manaka 🗓 sak	งกระบรษธรรณีกรก	tau essa e e salu seccia.	น คือ ครอ ลูกคือนี้จะลูกรร	การกระบบระบบระบบ	(571,767.63) (158,076.86)	the entire type yet a sewer god garden with entire and
LGE-131400-Cane Run Unit 2 Turbogon	(20,928,57)								(20,928.57)	
LGE-131400-Cane Run Unit 3 Turbogon	(1,004,854.68)	(281,975,92)							(1,004,854.68)	사람들은 이 얼마를 받아 가셨다.
LGE-131400-Cane Run Unit 4 Turbogen LGE-131400-Cane Run Unit 5 Turbogen	(8,392,813,65) (7,474,446,80)	(176,085,24)					-	12 W. <b>.</b>	(8,674,789.57) (7,650,532,04)	
LGE-131400-Cane Run Unit 6 Turbegen	(10,483,112,70)	(509,153,11)	96,081,87	•	•	3,278.27	*** **********************************		(10,892,905.67)	
LGE-131400-Mill Crock Unit 1Turboge LGE-131400-Mill Creck Unit 2 Turbog	(12,433,492,17) (12,498,379,14)	(315,759,12) (413,528,31)		•	-	-		•	(12,749,251,29) (12,911,907,45)	Paradologia (1995)
LGE-131400-Mill Crook Unit 3 Turbog	(20,542,219,23)	(604,637,66)	:		-	-	-	-	(21,148,758,78)	
LGE-131400-Mill Crook Unit 4 Turbog	(26,997,637,24)	(976,826,22)	7,393,32		-		-	-	(27,967,070,14)	
LGE-131400-TC 1 Future Use - 105 LGE-131400-Trimble Unit 1 Turbogene	(1,950,195,75) (19,944,862,10)	(102,801.36)					e de la celebrat d <mark>e</mark> la decen	etan artist te	(2,052,997.11) (21,348,827,48)	
LGE-131400-Turbogenerators	(121,901,018.89)	(4,784,632,21)	103,475.19		1.7 a 1.7 f 1.00	3,278,27			(126,578,897.64)	and the state of the second second of the
LGE-131500-Cone Run Unit 1 Accessor	(2,360,679.77) (1,625,642.34)		7,355.78			17,140.68			(2,336,183.31) (1,625,642.34)	ET DESTRUCTION STANDARDS EN CONTRACTOR
LGE-131500-Cane Run Unit 2 Accessor	(1,020,042,34)	San	and the second by the fire	in the state of the		restriction of the state of the	and the second of the second o	makan matanta	(1,020,042,34)	

### LOUISVILLE GAS & ELECTRIC COMPANY RESERVE FOR DEPRECIATION AND AMORTIZATION OF ELECTRIC PLANT IN SERVICE - KENTUCKY - FINANCIAL ACCOUNTING REFE!

	Beginning Balance	Accruals	Rotirements	Transfors/ Adjustments	RWIP Transfers Out	Cost of Remova!	Salvago	Other Credits	Ending Balance	
LGE-131500-Cano Run Unit 3 Accesory	(1,319,656,59)		a i er i ku i kekila.	. Arturiene.		_			(1,319,656,59) :: -:	etat service v
LGE-131500-Cane Run Unit 4 Accessor	(3,370,503,32)	(176,970.12)	747,59	•	ann ga an air	-	-		(3,546,725.85)	
LGE-131500-Cane Run Unit 4 SO2 Acce LGE-131500-Cane Run Unit 5 Accesso	(2,226,380,25)	(8,101.20) (265.253.26)				tina kanala 🔭 📑	-		(2,234,481,45)	
LGE-131500-Carlo Run Unit 5 SQ2 Acco	(3,035,618,06)	(33,025,80)							(4,048,129.36) (3,088,643.86)	
LGE-131500-Cane Run Unit 6 Accessor	(4,852,368,91)	(250,323.39)							(5,102,692,30)	
LGE-131500-Cane Run Unit 6 SO2 Acce LGE-131500-MIII Creek Unit 1 Access	(2,818,103,44) (7,242,151,24)	(31,678,68) (397,355,79)			· · · · · ·	<u>.</u>			(2,849,782,12) (7,639,507,03)	
LGE-131500-Mill Crook Unit 1 SQ2 Ac	(6,154,687,44)	(92,546,28)	en e See Li	and a second	garar 🖺 🗓				(6.247.233.72)	
LGE-131500-MIII Crook Unit 2 Accoss	(4,254,129.64)	(130,754.68)	•		-	•			(4,384,884,52)	
LGE-131500-Mill Crock Unit 2 SO2 Ac LGE-131500-Mill Crock Unit 3 Access	(5,052,247,67) (11,336,111,35)	(76,135.44) (215,505.68)				398,25		-	(5,128,383,11) (11,551,218,78)	
LGE-131500-Mill Creek Unit 3 SO2 Ac	(3,274,372,33)	(39,495,60)			•	7		<u>.</u>	(3,313,867.93)	
LGE-131500-Mill Creek Unit 4 Access LGE-131500-Mill Creek Unit 4 SO2 Ac	(14,677,601,95) (5,612,077,66)	(371,108,77) (100,291,08)	.=	•	-	-		-	(15,048,710.72)	
LGE-131500-Will Critick Critic 4 302 Ac	(5,840,01)	(256.68)		:	-	•			(5,712,368,74) (6,096,69)	
LGE-131500-Trimble Unit 1 Accessory	(22,522,320.98)	(971,960.00)	12,889.98		-	1,360,15	e de la companya de		(23,480,030.83)	- 4 - 14, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19
LGE-131500-Trimble Unit 1 SO2 Acces LGE-131500-Accessory	(2,209,753,00) (107,733,122.03)	(58,022,64) (3,218,785,29)	20,993,35		and the second	18,899.08	A I S. D. H. H. H. S. P. D. P.		(2,267,775,64)	100
LGE-131501-AROP Cane Run Unit 4 Accessor	(361,541,34)	(9,705,72)	20,883.35		ากราช สหระจับส	10,088.05	ara garag sersa <mark>l</mark> a isi	alen ann, a 🗓	(371,247.08)	1 14 9 45 55 4
LGE-131501-AROP Cane Run Unit 5 Accessor	(210,501.12)	(5,436,72)							(215,937.84)	21.00
LGE-131501-AROP Cane Run Unit 6 Accessor LGE-131501-AROP MC 1 Accessor	(1,136,520.77) (712,796,07)	(74,970,12) (20,166,12)							(1,211,490.89) (732,962.19)	
LGE-131501-AROP MC 2 Accessor	(850,157.22)	(16,755.24)							(866,912.46)	
LGE-131501-AROP MC 3 Accessor LGE-131501-AROP MC 4 Accessor	(1,114,674,16)	(17,474,40)				경기 사람들이 살아 있다.			(1,132,148.56)	
LGE-131501-AROP TC 1 Accessor	(2,084,854.61) (915,649,34)	(41,712,96) (69,079,00)		Carrierants values.					(2,126,567,57) (974,028,34)	
LGE-131501-AROP Accessory	(7,386,594,63)	(245,300.28)		•				•	(7,031,894.91)	
LGE-131600-Cane Run Unit 1 Misc. Po	(23,531,62)								(23,531,62)	
LGE-131600-Cane Run Unit 3 Misc. Po LGE-131600-Cane Run Unit 4 Misc. Pe	(12,867,86) (10,014,37)	(5,496.72)							(12,867.86) (15,511.09)	100
LGE-131600-Cane Run Unit 4 SO2 Misc	(16.511,23)	(183.00)		Post service and Lynn	Secretaria de Prato de Seu				(16,694,23)	gwai san
LGE-131600-Cane Run Unit 5 Misc, Po	(26,330,19)	(5,236,56)							(31,568.75)	
LGE-131600-Cane Run Unit 5 SO2 Misc LGE-131600-Cane Run Unit 6 Misc. Po	(71,168,99) (1,171,513.03)	(1,348,08)	8,727,53						(72,617.07)	
LGE-131600-Cane Run Unit 6 SO2 Misc	(49,409.32)	(868.20)	0,727,50			dipaky siet <u>i</u> as			(1,285,087,90) (50,277,52)	
LGE-131600-Mill Croek Unit 1 Misc P	(443,631,09)	(22,809.67)	SCHOOL STATE	and the second	•	10 page 10 14 14	ک ور در در	- 11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	(466,440.76)	
LGE-131600-Mill Creek Unit 2 Misc. LGE-131600-Mill Creek Unit 3 Misc.	(87,542,73)	(3,588.71)	-		•	•		in in the state of	(91,131,44)	
LGE-131600-Mill Creek Unit 4 Misc.	(305,913.67) (2,242,835,58)	(8,456.37) (192,540,06)							(314,370.04) (2,435,375,64)	
LGE-131600-M II Creek Unit 4 SO2 M	(43,753,78)	(2,199.16)	9,801.66		-	<u>-</u>			(38,151.28)	
LGE-131600-Trimble Unit 1 Misc, Pow LGE-131600-Misc, Power Plant	(1,037,333,88) (5,542,357,34)	(82,873.60)	40.500.40	•	-	•	•	•	(1,120,207,48)	patia provincia di co
LGE-131707-ARO Cost Steam (Eqp)	(2,542,357,34)	(447,902,53) (778,839,00)	18,529.19 3,300.00	3,114,913,70	-	•		-	(5,971,730.68)	
,	(1,045,160,651,57)	(65,405,349,30)	4,309,469,71	3,114,913.79		710,221.79	(45,461,74)	<del>-</del>	(1,102,478,857.32)	
Electric Transmission										
LGE-135010- KY Electric Transmission -	(1,418,664,11)	(286,799,40)		-	-	-	-		(1,705,463,51)	
LGE-135020-Electric Transmission - LGE-135210- KY Electric Transmission -	(1,268,556,53)	(58,134,56)	200,353,49	(40 700 70)	-	-	•	-	**	
LGE-135210-TC Sw. Station - Substat	(64,752,98)	(2,808,56)	200,353.49	(12,780,79)	:	-	•	-	(1,139,118,39) (67,361,54)	
LGE-135210-TC Unit 1 - Trans Sub	(11,571,58)	(1,264,20)	-	12,780.79	-	-	_		(54.97)	
LGE-136310- KY Electric Transmission -	(60,889,871.63)	(1,425,242.01)	328,033,65	-	-	159,160.52		•	(61,827,919,47)	
LGE-135310-TC Sw. Station - Substat LGE-135310-TC Unit 1 - Trans Sub	(5,896.59) (601.17)	(0.58)		-	-	-	-	-	(5,897,17) (501,17)	
LGE-135311-AROP Stution Equip	(1,975,03)	-	-	-	-	-	-	-	(1,975,03)	
LGE-135311-AROP TC1 Station Equip LGE-135400- KY Electric Transmission -	(637.73) (17.170.363.82)	(354,130,16)	-	-	-	-	-	-	(637,73)	
LGE-135400- KY Electric Transmission - LGE-135500- KY Electric Transmission -	(17,170,383.82)	(1,304,017,36)	59,795,82	-		59,415,08	-	-	(17,524,493,98) (16,056,160,47)	
LGE-135600- KY Electric Transmission -	(19,767,844.80)	(1,000,723,57)	137,321,13	-	- u	57,601.77	(71,305.28)	-	(20,644,950.75)	
LGE-135700-Electric Transmission -	(531,773.78)	(41,073.76)	-	-		-	-	-	(572,847.54)	
LGE-135800-Electric Transmission - LGE-135915-ARO Cost Transm (L/B)	(1,805,610,38) (667,12)	(188,558.84) (72.71)	-	698.43	-	-		-	(1,992,169.22) (41.40)	
LGE-135917-ARO Cost Transm (Eqp)									(41.40)	
	(117,810,041,22)	(4,660,625.71)	725,504.09	598.43	-	276,177,35	(71,305,28)		(121,539,592,34)	
T-15 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -										
Total Electric Depreciation Reserves	(1,638,245,694,33)	(101,758,379,85)	13,160,297,59	3,291,642.05		9,576,589.56	(404,204,47)		(1,714,377,749,45)	
Electric Intangible Plant										
LGE-130100-Elect Intagible Plant -	-	-	-		-	-	-	-	•	
LGE-130200-Franchises and Consents	(100.00)								(100,00)	
	(100.00)	-			-			-	(100.00)	
Total Electric Amortization Reserves	(100,00)		•					***************************************	(100.00)	

Cost of Removal

## Louisville gas $\aleph$ electric company reserve for depreciation and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization of electric plant in service - kentucky - financial accounting specification and amortization accounting specification and accounting specification and accounting specification and accounting specification accounting specification and accounting specification and accounting specification accounting specification and accounting specification accounting spec

	Boginning Balance	Accruain	Retirements	Transfers/ Adjustments	RWIP Transfers Out	Cost of Romoval	Salvage	Other Credits	Ending Balanco
Gas Distribution									
LGE-237412-Gas Distribution Land	_	-	_	_		_			_
LGE-237422-Gas Distribution Land RI	(77.350.77)	(29,64)	_	_				-	(77,380,41)
LGE-237510-Gas Distribution - City	(136,481,22)	(3,890,94)	-	_	-	-	-	_	(140,372,16)
LCE-237520-Gas Distribution - Other	(126,057,76)	(44,299,91)	4.564.22	•	-	13.832.64		_	(151,980,81)
LCE-237600-Gas Distribution - Mains	(102,713,001,40)	(5,453,240,34)	1,626,955,41			54,867,61	-		(106,484,418,72)
LGE-237600-Gps Distribution - Measu	(2,461,910,44)	(270,978.59)	98,140,31	_	-	27,829,44	-	-	(2,606,919,28)
LGE-237900-Ges Distribution - City	(1,596,465,89)	(95,822,42)	37,748.73	-		12,901.50	-	-	(1,641,638,08)
LGE-238000-Gas Distribution - Gas S	(57,705,213.38)	(6,221,301,56)	41,171,84	-	•	58,468,50	-	-	(63,826,934,60)
LGE-238100-Motors	(4,734,534.87)	(1,424,068,34)	11,215,64	-	-	-	-	-	(6,147,387.57)
LGE-238300-Regulators	(995,895,70)	(483,831.36)	918,088.90	-	-	69,069.85	(9,300.67)		(481,888.98)
LGE-238500-Gas Distribution - Indus	(113,340.31)	(3,452,63)	12,109,47	-	-	14,344.16		<u>.</u>	(90,339.31)
LGE-238700-Gas Distribution - Other	(14,945.82)	(2,981,88)		•	-	-	-	-	(17,927.70)
LGE-238805-ARO Cost Gos Dist (L/8)	(177.12)	(22,33)		182,96	-	-	•	-	(16.49)
LGE-238807-ARO Cost Gos Dist (Eqp)	(20,203,33)	(110,110,66)		80,595,55					(49,718.44)
	(170,695,578,01)	(14,094,090,60)	2,749,974.52	80,778.51	•	251,313,70	(9,300.67)	-	(181,716,902,55)
Gas General Plant									
LGE-239210-Transportation Equip-Car	(1,866,147.04)	(4,799.38)	139,830.54	1,688,97		•	-		(1,729,426.89)
LGE-239220-Transportation Equip-Tra	(181,279.75)	(22,024,15)	-	9,911,99	-	-	-	-	(193,391.91)
LGE-239400-Tools, Shop, and Garago	(1,438,296,93)	(196,562.90)	-	(111,529,54)	*	-	•	-	(1,746,389,37)
LGE-239500-Laboratory Equipment	(430,423,33)	(109,717,66)	430,028,54	110,114.45	-	-	-	-	-
LGE-239610-Power Op Equip-Hourly Re	(2,337,010,27)	(59,787,86)	35,486.97	(10,061.94)	-	•	-	-	(2,371,373,10)
LGE-239620-Power Op Equip - Other	(31,845.66)	(1,200.00)		(123.93)					(33,259,58)
	(6,285,002.97)	(394,181.93)	605,344.05	(0,00)	-		•	•	(6,073,840.85)
Gas Storage									
LGE-235010-Gas Storage Underground		-		-	-	-	-	-	<del>-</del>
LOE-235020-Gas Storage Underground	(70,451,45)			-	-	•	•	•	(70,451,45)
LGE-235120-Gas Storage Undg Comp	(848,110,03)	(61,963.25)	14,163,04	-	-	-	•	-	(895,910.24)
LGE-235130-Gas Storage Undg Regu	(14,636,49)			-	-			-	(14,636,49)
LGE-235140- KY Can Storage Underground	(804,103.36)	(14,926.85)	25,726,34	•	•	47,604.60	(63,60)	-	(745,762.87)
LGE-235210-Gas Storage Undg Leas	(569,589.96)	-	•	•	-	-	-	•	(569,589,96)
LGE-235220-Gas Storage Underground	(452,027.29)	****	-	•	•	-	-	•	(452,027,29)
LGE-235230-Gas Storago Undg Non	(7,504,837.58)	(88,769,52)	-	•	•	•	-	•	(7,683,607.10)
LGE-235240- KY Gas Storage Underground	(2,287,367.44)	(7,721,52)	-	<del>-</del>	-	-	•	•	(2,295,088.98)
LGE-235250- KY AROP Gas Storage Underground	(537,191,85)	(157,595.47)		200,143.84	-		-	-	(494,643,48)
LGE-235255- KY Gas Storage Underground		(71,473.90)	450,235.06	(257,959.09)	-	1,842,21	•	-	122,644,28
LGE-235300- KY Gas Storage Undergroun	(6,814,339,83)	(218,696.39)	146,482.86	58,446.21	-	59,310,09	-	-	(6,768,797,06)
LGE-235400-Gas Storago Undg Comp	(5,399,415,47)	(209,684,72)	1,094,362,53	871.93	-	45,190.46	-	-	(4,468,675.27)
LGE-235500-Gas Storage Undg Meas	(271,485,41)	(5,241.58)	F0.405.15	-	-	07 440 45	-	-	(276,726.99)
LGE-235600-Gas Storage Undg Purl	(4,967,518,91)	(213,981,49)	58,123.18	-	-	27,449.41	-	-	(5,095,927.81)
LGE-235700- KY Gas Storage Underground	(253,263,14)	(25,215,60)	-		-	-	-	-	(278,478.74)
LGE-235805-ARO Cost Gas UG Store (L	(1,969,40)	(223.64)	•	2,039.91	-	•	-	-	(153.13)
LGE-235807-ARO Cost Gas UG Store (E	(400,303.77)	(37,766.23)	4 700 000 51	398,757.03		454 505 ***			(39,312,97)
	(31,286,611,38)	(1,113,260,16)	1,789,093,01	402,299.83	-	181,396.77	(63,60)	-	(30,027,145.53)

## Louisville Gas & Electric Company reserve for depreciation and amortization of electric plant in service - Kentucky - Financial accounting sees for the service of the second se

	Boginning Balance	Accruals	Retirements	Transfers/ Adjustments	RWIP Transfers Out	Cost of Removal	Salvage	Other Credits	Ending Balance
Gas Transmission									
LGE-236520-Gas Transmission Rights	(207,645.87)	(595.80)	-	-	-	-	-	-	(208,241,67)
LGE-236700-Gas Transmission - Mains	(12,005,981.40)	(59,290 32)	6,099.28			19,917.95			(12,039,254.49)
	(12,213,627,27)	(59,886,12)	6,099,28	-	-	19,917,95	-	•	(12,247,496.16)
Total Cas Deprociation Reserves	(220,480,819,63)	(15,681,418.81)	5,150,510,88	483,078.34		452,628.42	(9,384,27)		(230,085,385,09)
						-			
Cas intangible Plant									
LGE-230200-Franchises and Consents	(800,00)					<del></del>	<u> </u>	<u> </u>	(600.00)
	(800.00)	-	-	-	•	-	-	-	(800,00)
Total Continues to the Continues of the	(800,00)								(800 00)
Total Gas Amortization Reserves	(00,008)								(800,00)
Communication of the Communica									
Common Coneral Plant LGE-338910-Common - Land		_	-		_	_	-	_	_
LGE-338920-Common - Land Rights	(122,943,06)	(5,961,84)	-	-		_	-		(128,904,90)
LGE-339010-Common Structures - Broa	(9,839,653,96)	(816,266.94)	161,600,49	-	-	113,314,04	_	-	(10,391,006,37)
LGE-339010-Common Structures - Gene	(5,070,291.10)	(906,984.53)	93,004.09	-	-	35,087.40	-	-	(5,914,604.14)
LGE-339010-Struct and Imp-LGE Bidg	(1,341,907,80)	(97,243.49)	•	-	•	•	•	•	(1,439,151.29)
LOE-339020-Common Structures - Tran	663,545,68	(106,829.52)		-	~		-	-	556,716.16
LGE-339030-Common Structures - Ster	(7,318,063,88)	(166,121.97)	31,313,96	•	•	8,139,96	•	•	(7,444,731.94)
LGE-339040-Common Structures - Othe LGE-339060-Common Structures - Micr	(158,667,24) (199,256,78)	(6,575.68) (21,552.84)	288,19	•	-	1,000,00	•	•	(163,954,73) (220,809,62)
LGE-339110-Office Furniture	(5,857,078,35)	(785,048,92)	- :			-	_	-	(6,642,123,27)
LGE-339120-Office Equipment	(1,834,041,61)	(335,107,13)							(2,169,148,74)
LGE-339130-Computer Equipment	(22,525,609,49)	(4,552,847,15)	14,558,299,96						(12,520,156,68)
LGE-339131-Personal Computers	(1,153,492.92)	(655,707.72)	•		₩	•	•		(1,809,200.64)
LGE-339140-Security Equipment	(1,190,378,49)	(208,493,61)	-	•	-	-	-	-	(1,398,872.10)
LGE-339210-Trans Equip-Cars and Tru	(92,152,33)	(9,549.93)	-	-	-	=	-	-	(101,702.26)
LGE-339220-Trans Equip-Trailors	(24,580.86)	(1,867.65)	-	•	-	-	-	-	(26,448.51)
LGE-339300-Stores Equipment	(528,422.19)	(68,787.75)	-	25 THE THE	-	-	•	-	(597,209.94)
LGE-339400-Tools, Shop, Garage Equi LGE-339500-Laboratory Equipment	(1,053,764.66) (22,361,93)	(202,422,69) (9,665,35)	22,281,50	(9,745,78) 9,745,78	•	•	•	•	(1,265,933.33) 0.00
LGE-339610-Power Op Equip-Hourly Ra	(258,314,21)	(2,279,19)	26,626,21	8,140,76		-	-		(233.967.19)
LGE-339620-Power Op Equip - Other	(8,152,01)	(567,36)	20,020.2.1		-	_			(8,719.37)
LGE-339700- KY Common - Communication E	(14,608,060,22)	(4,347,998,68)	10,744,41	-	-	9,833,65	-	_	(18,935,480,84)
LGE-339710-Communication Equip-Comp	(5,692,267,37)	(57,632.64)		-	-	· •	-	-	(5,749,900.01)
LGE-339800-Miscellaneous Equipment	(358,954.78)	(207,234.03)	-	-	-	-	-	-	(586,188.81)
LGE-339915-ARO Cost Common (L/B)	(1,233.92)	(682.99)		1,553.72	<del></del>		<u> </u>	<del></del>	(343.19)
	(78,602,101,48)	(13,633,407.80)	14,894,758,80	1,553,72	-	167,355.05	-	-	(77,171,841,71)
Non-Utility Property									
LGE-312101-Nonutility Prop - Coal L	10.00	-	-	-	*	~	-	-	1040 451
LGE-312103-Nonutility-Coal Rts of W	(249,93)	•	•	-	-	-	-	-	(249,93)
LGE-312104-Nonutility Prop - Miss L LGE-312102-Nonutility-Coal Mineral	(63,110.43)		-	•					(63,110,43).
LOE-0 (2 Toznachodky-000k lalifieta)	(63,380,36)		<del></del>	<del></del>	<del></del>	<del></del> -	<del></del>	<del></del> -	(63,360,36)
	(00,000,00)	-	_	_	_	_	_	-	,50,500,500,
Total Common Depreciation Reserves	(78,655,461,84)	(13,633,407.80)	14,894,758,80	1,553 72		187,355.05			(77,235,202,07)
•									

## Louisville gas & electric company reserve for depreciation and amortization of electric plant in service - kentucky - financial accounting $\pi$ REF!

	Beginning Belance	Accruals	Retirements	Transfers/ Adjustments	RWIP Transfers Out	Cost of Removal	Salvage	Other Credits	Ending Belance
Common Intangible Plant LOE-330100-Common Intangible Plant LOE-330200-Franchees and Consents LOE-330200-Misc Intang Plant-Seftwa LOE-330310-CCS Software LOE-330320-Low Library	(4,200,00) (15,402,812,34) (2,871,587,01)	(3,605,662,82) (4,121,326,08)	9,699,197,65	- - - -	- - - -	-	-	- - - -	(4,200.00) (9,309,277,51) (6,992,913,09)
Total Common Amortization Reserves	(18,278,599.35)	(7,726,988,90)	9,699,197,65	<u> </u>	-	<u> </u>			(16,306,390,60)
TOTAL KENTUCKY RESERVES	(1,955,671,475,15)	(138,778,195,36)	42,904,764.90	3,776,274 11	-	10,196,573.03	(413,588 74)	1144	(2,037,985,827,21)

## LOUISVILLE GAS & ELECTRIC COMPANY RESERVE FOR DEPRECIATION AND AMORTIZATION OF PLANT IN SERVICE - INDIANA - FINANCIAL ACCOUNTING #REF!

_	Beginning Balance	Accruals	Retirements	Transfers/ Adjustments	RWIP Transfers Out	Cost of Removal	Salvage	Other Credits	Ending Balance
Electric Distribution									
LGE-136200- IN Elect. Dist. Substation	<del></del>	<del></del>				<del></del>		<del>-</del>	-
									_
Electric Transmission									
LGE-135010- IN Electric Transmission -	(243,189.13)	(18,231,96)	-	-	-	•	-	-	(261,421.09)
LGE-135020- IN Electric Trans -	-	-	•	-	-	-	•	-	· · · · ·
LGE-135210- IN Electric Transmission -	(216,029.01)	(3,962,88)	-	-	-	•	-	=	(219,991,89)
LGE-135310- IN Electric Transmission -	(7,024,687.67)	(139,301.41)	7,945.07	-	-	2,143.78	•	-	(7,153,900.23)
LGE-135400- IN Electric Transmission -	(4,617,656.20)	(84,918.07)	125,471.54	-	-	115,830.42	(21,571.29)	-	(4,482,843,60)
LGE-135500- IN Electric Transmission -	(919,537,81)	(55,488,45)		-	-		-	-	(975,026,26)
LGE-135600- IN Electric Transmission -	(2,810,331.71)	(85,928.83)	25,868.36		<u> </u>	23,880,67	(4,447.34)		(2,850,958.85)
	(15,831,431.53)	(387,831.60)	159,284.97	-	-	141,854.87	(26,018.63)	-	(15,944,141.92)
Total Electric Depreciation Reserves	(15,831,431.53)	(387,831.60)	159,284.97		-	141,854.87	(26,018.63)		(15,944,141,92)
One Stewart									
Gas Storage LGE-235140- IN Gas Storage Underground	(62,823,57)	(4,718.16)							(07.544.70)
LGE-235140- IN Gas Storage Underground	(82,823,57)	(4,718.16) (1,458.00)	-	•	•	-	-	•	(67,541.73) (295,082,07)
LGE-235240- IN AROP Gas Storage Underground	(303,477.17)	(20,362.19)	-	118.863.75	-	•	=	•	(295,082,07) (204,975,61)
LGE-235255- IN Gas Storage Underground	(505,477.17)	(12,571,66)	54,470,80	(123,203.02)	-	1,584,75	•	-	(79,719,13)
LGE-235300- IN Gas Storage Undergroun	(625,349.75)	(24,081,52)	133,137,30	3,708.31	-	1,309,11	-	•	(511,276.55)
LGE-235400- IN Gas Storage Undergroun-Compress	(9,072.49)	(24,001,02)	100,101.00	9.072.49	-	1,505,11	-	-	(511,270,55)
LGE-235700- IN Gas Storage Underground	(23,253.19)	(9.314.22)	-	(9.944.42)	•	-	-	•	(42,511.83)
LGE-235700- IN Gas Storage Onderground	(1,317,600.24)	(72,505.75)	187,608.10	(1,502.89)		2,893.86			(1,201,106.92)
Total Gas Depreciation Reserves	(1,317,600.24)	(72,505.75)	187,608.10	(1,502.89)	_	2,893,86		·	(1,201,106.92)
Common General Plant LGE-339700- IN Common - Communication E	(409,207.90)	(92,826.60)	•	•	-	-	-	-	(502,034,50)
	, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,							, .,
Total Common Depreciation Reserves	(409,207,90)	(92,826,60)						•	(502,034.50)
TOTAL INDIANA RESERVES	(17,558,239.67)	(553,163,95)	346.893.07	(1,502.89)		144,748,73	(26,018.63)		(17,647,283.34)
				1,1,000,000,000,000,000,000,000,000,000	**************************************		(	<del></del>	

Attachment to Response to KU AG-1 Question No. 201 Page 1410 of 2028 Charnas

### Crescente, Angela

From: Sent:

PowerPlantAlerts@lge-ku.com Tuesday, July 19, 2011 6:00 AM

To:

Subject:

Crescente, Angela PowerPlant Alerts - LGE-KU - AIP - ARO

Follow Up Flag: Flag Status:

Follow up Completed

Project 134560 has ARO

login to powerplant

#### Attachment to Response to KU AG-1 Question No. 201 Page 1411 of 2028 Charnas

#### Crescente, Angela

From:

Crescente, Angela

Sent: To: Friday, July 15, 2011 10:41 AM Raque, Gary; Ritchey, Stacy RE: Brown Main Pond Close Out

Subject: Tracking:

Recipient

Raque, Gary Ritchey, Stacy Read

Read: 7/15/2011 10:43 AM Read: 7/15/2011 11:47 AM

Please be sure to let me know when you begin construction on the new landfill (inserting the first bottom layer) so I can remove the main ash pond's liability.

Thanks, Angela

From: Raque, Gary

Sent: Friday, July 15, 2011 10:39 AM

To: Crescente, Angela

Subject: RE: Brown Main Pond Close Out

#### Angela,

Due to our conversation today we will not be charging ARO or removal charges to the Brown CCR ash pond. At this time we will not be utilizing an ARO task.

From: Crescente, Angela

Sent: Friday, July 15, 2011 9:34 AM

To: Raque, Gary

Subject: RE: Brown Main Pond Close Out

#### Gary,

I haven't seen any charges on this task yet, but it is my understanding (based on what I heard in the meeting we were just in) that the pond has been drained and construction is being started on the landfill conversion. I was just wondering where the closeout of the ash pond charges have been going.

Thanks, Angela

From: Raque, Gary

Sent: Monday, June 20, 2011 3:51 PM

To: Crescente, Angela

Subject: RE: Brown Main Pond Close Out

Yes its being converted to a Landfill

Attachment to Response to KU AG-1 Question No. 201 Page 1412 of 2028 Charnas

From: Crescente, Angela

Sent: Monday, June 20, 2011 3:49 PM

To: Raque, Gary

Subject: RE: Brown Main Pond Close Out

I have set up a task called CP ARO for this purpose. Is the whole ash pond being closed?

From: Raque, Gary

Sent: Monday, June 20, 2011 3:38 PM

To: Crescente, Angela

Subject: Brown Main Pond Close Out

#### Angela,

Just wanted to bring to your attention that we will probably have charges this year related to "closing out" of the Brown CCR Main Pond (Project #132371). This will need to have an the ARO task set up. I know that you set them up before.

Gary Raque LG&E and KU Energy LLC Project Engineering BOC 3

Phone: (502) 627-3241 Fax: (502) 217-2801 gary.raque@lge-ku.com Attachment to Response to KU AG-1 Question No. 201 Page 1413 of 2028 Charnas

		Charnas
Crescente, Ang	gela	
From: Sent: To: Subject:	Crescente, Angela Thursday, June 09, 2011 9:05 Rose, Bruce; Ritchey, Stacy RE: TC and Ghent Landfill Cap	
Tracking:	Recipient Rose, Bruce Ritchey, Stacy	Read Read: 6/9/2011 9:08 AM Read: 6/9/2011 11:09 AM
closing/retirement the ARO retiremen other removal cost	of the landfill is considered an ARO. If t, then a separate task using account 10 s based on your email below, but thoug	ccount 108799 for the cover soil and seed portion as the you have any removal costs on the same project not related to 08901 would be needed. I would not expect there to be any ght I should mention that just in case. It would also help us to landfill goes including the amount retired as Bruce stated
Thanks, Angela		
To: Ritchey, Stacy;	ıne 09, 2011 8:51 AM	
Stacy,		
you are speaking of be associated with ARO, the proper ac	f. In this case, they are in effect closing tremoval/retirement, and then we woul	seeding per the process at Mill Creek. I assume this is what that portion of the landfill, meaning that these charges should d retire a portion of the landfill. However, as these costs are sed an engineer to tell us how many acres or a percentage of 2?
To: Crescente, Ang	ne 09, 2011 8:45 AM	
Angela or Bruce,		
Could you take a lo	ok at the e-mail below. Would landfill o	capping be considered ARO at Ghent and Trimble?
Thanks,		
Stacy		

From: Hudson, Rusty

Attachment to Response to KU AG-1 Question No. 201 Page 1414 of 2028 Charnas

Sent: Thursday, June 09, 2011 8:18 AM

To: Ritchey, Stacy

Subject: RE: TC and Ghent Landfill Capping / Holcim

Stacy, I would check with Bruce. I thought those were ARO but I could be mistaken. Rusty

From: Ritchey, Stacy

Sent: Wednesday, June 08, 2011 2:34 PM

To: Hudson, Rusty

Subject: TC and Ghent Landfill Capping / Holcim

Rusty,

At the end of Landfill construction there are costs associated with capping, are those cost capital or O&M? For example, the Ghent Landfill is expected to be complete in 2013. There are capping costs associated with Phase I in 2015 and 2016. If they are capital do we hold the project open to cover the capping costs, or do we associate the capping of Phase I as part of the cost of Phase II? Or should it be considered O&M?

Also, on Holcim I think assumption 4.3 should be changed to 3<sup>rd</sup> quarter 2012. We are going to the IC for an EPC contract in the October 2011 time frame.

Thanks,

Stacy

#### Attachment to Response to KU AG-1 Question No. 201 Page 1415 of 2028 Charnas

## Crescente, Angela

From:

Stratman, Paul

Sent:

Monday, May 09, 2011 4:10 PM Singleton, Janna; Leenerts, Patricia

To: Cc:

Murphy, Kevin; Crescente, Angela

Subject:

RE: Project MAN414

For all LSMR414, PMR414 and MAN414 retirements, the pipe is cut, capped, purged and abandoned in place (left in the ground to rot away for all eternity).

Miles and miles of it.

From: Singleton, Janna

Sent: Monday, May 09, 2011 4:07 PM To: Leenerts, Patricia; Stratman, Paul Cc: Murphy, Kevin; Crescente, Angela Subject: RE: Project MAN414

Pat,

Just to clarify and prevent further emails...

Is your question – Did the tasks 6THMARRET and JEF13THINV have cut, cap and purge associated with them in which the pipe remained in the ground without gas flowing through it; therefore, making them ARO retirements?

#### Tanna



Think Green! Before printing this e-mail, ask the guestion, is it necessary?

From: Leenerts, Patricia

Sent: Monday, May 09, 2011 4:00 PM

To: Stratman, Paul

Cc: Murphy, Kevin; Singleton, Janna; Crescente, Angela

Subject: RE: Project MAN414

Paul, I did not define my question clearly. I am attempting to determine if the retirements involved on this (and any gas) project would be an ARO retirement. The ARO retirement is defined by cut, cap and purge, but also includes the retired pipe to be left in the ground without active flow of gas. I will refer to this as ARO retirements, if that is helpful for the future. I'm hoping to reduce confusion in the future from my questions, so if there is better terminology then let me know.

I believe that pipe is cut, cap and purged either temporarily or permanently so that work may be performed on the pipe. If you cut, cap and purge a pipe and then T into it to reroute, this would not be an ARO or even a regular retirement. The section of pipe which has been left in the ground, without gas flowing through it, would be the ARO (108799) retirement. If a section of pipe is retired and removed from the ground, then the cost associated with this type of retirement would be a normal 108901 retirement.

Thanks,

Attachment to Response to KU AG-1 Question No. 201 Page 1416 of 2028 Charnas

Pat 502-627-3811

From: Stratman, Paul

Sent: Wednesday, April 20, 2011 3:13 PM

**To:** Leenerts, Patricia **Cc:** Murphy, Kevin

Subject: RE: Project MAN414

Yes, these are cut, cap and purge retirements.

It is impossible to retire a gas facility without a cut, cap and purge operation. Without such an operation, gas would continually leak out into the atmosphere.

From: Leenerts, Patricia

Sent: Wednesday, April 20, 2011 2:44 PM

To: Stratman, Paul

Subject: Project MAN414

Paul, is this blanket your responsibility?

Could retirements have cut, cap and purge? I have 2 tasks in particular that I'm trying to work... 6THMARRET and JEF13THINV.

If you could let me know by April 27, I would appreciate it...if not your project, please let me know so that I can forward to correct person and still get the answer by Apr 27.

Thanks,

Pat

502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1417 of 2028 Charnas

# Crescente, Angela

From:

Sent:

Raque, Gary Thursday, April 28, 2011 2:59 PM Crescente, Angela FW: Ohio Falls

To: Subject:

Angela,

Is there an ARO set up for the Ohio Falls project?

Gary Raque LG&E and KU Energy LLC **Project Engineering** 

BOC 3

Phone: (502) 627-3241 Fax: (502) 217-2801 gary.raque@lge-ku.com

Attachment to Response to KU AG-1 Question No. 201 Page 1418 of 2028 Charnas

# Crescente, Angela

From:

Mooney, Mike (BOC 3)

Sent:

Tuesday, April 26, 2011 10:10 AM

To:

Crescente, Angela

Subject:

Canal and Paddy's Run DEMO

Angela,

I am getting ready to send AIP's through to open up the Canal and Paddy's Run Demolition projects. Stacy Ritchey suggested I check with you to see if there is an ARO reserve set up for them.

THANKS!!!

Mike Mooney

Budget Analyst III, Project Engineering

BOC 3

BOC Phone: (502) 627-3671

Fax: (502) 217- 2943

E-mail: Mike.Mooney@lge-ku.com

#### Attachment to Response to KU AG-1 Question No. 201 Page 1419 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Friday, April 15, 2011 11:52 AM

To:

Duce, John; Richardson, Ralph

Cc:

Kinder, Debra; Wacker, Diana; Wiseman, Sara; 'nalexander@pwrplan.com'; Jim Ogilvie; Neal,

Susar

Subject:

RE: Build is Ready

The updated ARO reports look great and they are ready to be moved into the build next week in PROD.

Thanks, Angela

From: Nick Alexander [mailto:nalexander@pwrplan.com]

**Sent:** Thursday, April 14, 2011 2:51 PM **To:** Duce, John; Richardson, Ralph

Cc: Kinder, Debra; Wacker, Diana; Wiseman, Sara; Neal, Susan; Crescente, Angela; Jim Ogilvie

Subject: Build is Ready

John/Ralph,

The build completed successfully and is ready to be migrated for testing in DEV and TEST.

I've copied the files to the network. The \\fs4\\lgeoracle\PowerPlan\CitrixTest\\IFRS\\bin folder includes the powerpla.exe and 44 PBD's from the new build.

The SRC folder has also been updated with the PBL's used to create this build.

Please run the attached script in TEST for the ARO Report object name updates. The script has already been run in DEV.

#### This build includes:

Cr Drilldown update – Allows the system control to be case sensitive.

5 updated ARO Reports - Angela will test.

Cursor Fix - Need to test through Citrix.

Let me know if you have any questions.

Nick Alexander

NALEXANDER@PWRPLAN.COM POWERPLAN CONSULTANTS, INC. (404) 217-7379

\*\*\*PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

Attachment to Response to KU AG-1 Question No. 201 Page 1420 of 2028 Charnas

# Crescente, Angela

From:

Sent:

To:

Cc:

Crescente, Angela Friday, April 15, 2011 11:00 AM Trenary, Samara Sneed, Lydia; Wiseman, Sara; Pienaar, Lesley Note 4

Subject:

Samara:

Please use this one for LKE Note 4:



Note 4 - Asset Retirement Obli...

Thanks, Angela

A summary of LKE's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

	_	ARO Net Assets			egulatory Assets
As of December 31, 2010	\$	97	\$ (103)	\$	9
ARO accretion and depreciation ARO settlements Removal cost incurred	_	- <u>(1)</u> - -	(2 <u>1)</u> - -		2
As of Error! Reference source not found. M 31, 2011	<del>arch</del> <u>\$</u>	<del>97</del> 96	\$ ( <del>105</del> <u>104</u> )	\$	11

At March 31, 2011, AROs totaling \$\frac{105}{104}\text{ million were recorded on the Balance Sheet, of which \$1 million is included in "Other current liabilities."

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Condensed Consolidated Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied; therefore, ARO net assets, ARO liabilities and regulatory asset balances do not net to zero.

LKE's AROs are primarily related to the final retirement of assets associated with generating units and natural gas mains and wells. LKE's transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

Attachment to Response to KU AG-1 Question No. 201 Page 1422 of 2028 Charnas

## Crescente, Angela

From:

Raible, Eric

Sent:

Friday, April 15, 2011 10:56 AM Crescente, Angela

To: Cc:

Wiseman, Sara

Subject:

RE: Note 3

I'll look into this and let you know.

Thanks,

T. Eric Raible, CPA
Manager, Regulatory Accounting & Reporting
Controller Group
LG&E and KU

P: 627-3426 F: 217-4800

From: Crescente, Angela

Sent: Friday, April 15, 2011 10:34 AM

To: Raible, Eric Cc: Wiseman, Sara Subject: Note 3

Eric,

I don't see the ARO Regulatory Asset line (h) on LKE, is there a reason it is not showing?

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1423 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Friday, April 15, 2011 10:55 AM

To:

Trenary, Samara

Cc:

Sneed, Lydia; Wiseman, Sara; Pienaar, Lesley

Subject:

Note 4 changes

Tracking:

Recipient

Read

Trenary, Samara

Read: 4/15/2011 10:55 AM

Sneed, Lydia Wiseman, Sara

Pienaar, Lesley

Read: 4/15/2011 10:55 AM

Samara:

I had to change Note 4 on KU and LKE. Please see the attached:





Note 4 - Asset

Note 4 - Asset

Retirement Obli... Retirement Obli...

Thanks,

Angela

A summary of LKE's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

	ARO Net Assets		ARO Liabilities		Regulatory Assets	
As of December 31, 2010	\$	97	\$	(103)	\$	9
ARO accretion and depreciation ARO settlements Removal cost incurred		- <u>(1)</u> - -		(21)		2 -
As of Error! Reference source not found. March 31, 2011	<u>\$</u>	<del>97</del> 96	<u>\$ (</u>	( <del>105</del> <u>104)</u>	\$	11

At March 31, 2011, AROs totaling \$105 million were recorded on the Balance Sheet, of which \$1 million is included in "Other current liabilities."

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Condensed Consolidated Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied; therefore, ARO net assets, ARO liabilities and regulatory asset balances do not net to zero.

LKE's AROs are primarily related to the final retirement of assets associated with generating units and natural gas mains and wells. LKE's transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

A summary of KU's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

		O Net	ARO Liabilities	Regulatory Assets	
As of December 31, 2010	\$	52	\$ (54)	\$	2
ARO accretion and depreciation ARO settlements		- <u>(1)</u>	(1_)		1
Removal cost incurred		_			<del></del>
As of Error! Reference source not found. A	Aarch \$	5 <u>21</u>	<u>\$ (554)</u>	\$	3_

At March 31, 2011, AROs totaling \$554 million were recorded on the Balance Sheet, of which less than \$1 million is included in "Other current liabilities."

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Condensed Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied.

KU's AROs are primarily related to the final retirement of assets associated with generating units. KU's transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

A summary of KU's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

		O Net sets	ARO Liabilities	Regulatory Assets
As of December 31, 2010	\$	52	\$ (54)	\$ 2
ARO accretion and depreciation		<u>-(1)</u>	(1-)	1
ARO settlements Removal cost incurred		# ·	-	
As of Error! Reference source not found. March 31, 2011	<u>\$</u>	5 <u>21</u>	\$ (5 <u>54)</u>	\$ 3

At March 31, 2011, AROs totaling \$554 million were recorded on the Balance Sheet, of which less than \$1 million is included in "Other current liabilities."

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Condensed Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied.

KU's AROs are primarily related to the final retirement of assets associated with generating units. KU's transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

Attachment to Response to KU AG-1 Question No. 201 Page 1427 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Friday, April 15, 2011 10:37 AM

To: Cc:

Raible, Eric Wiseman, Sara RE: Note 3

Subject:

Eric,

The same is true for KU, I can't find it there either.

Thanks, Angela

From: Crescente, Angela

Sent: Friday, April 15, 2011 10:34 AM

To: Raible, Eric Cc: Wiseman, Sara Subject: Note 3

Eric,

I don't see the ARO Regulatory Asset line (h) on LKE, is there a reason it is not showing?

Thanks, Angela

#### Attachment to Response to KU AG-1 Question No. 201 Page 1428 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Tuesday, April 12, 2011 11:21 AM

To: Cc: Trenary, Samara Wiseman, Sara

Subject:

RE: Reporting Package

#### Samara:

I went ahead and deleted the line "Removal cost incurred" per discussion with John Nitsche at PPL since he wanted us to use the line "Obligations settled" for our cash payments.

Thanks, Angela

From: Trenary, Samara

Sent: Tuesday, April 12, 2011 9:58 AM

To: Crescente, Angela

Subject: RE: Reporting Package

My apologies...I didn't know there was a difference. Whatever is considered the reporting package support is due today. I checked the calendar and the notes tie-out is due on the 25<sup>th</sup>. Thanks for the clarification!

From: Crescente, Angela

Sent: Tuesday, April 12, 2011 9:50 AM

To: Trenary, Samara

Subject: RE: Reporting Package

Based on the meeting this morning, it was my understanding that the reporting package support was due today, but the footnote support isn't due until the 25<sup>th</sup>. Please confirm.

From: Trenary, Samara

Sent: Tuesday, April 12, 2011 9:43 AM

**To:** Crescente, Angela **Subject:** Reporting Package

FYI...the supporting documentation/tie-outs for your footnote are due today. We are giving everything to Shannon and Valerie to review at two today. It would be great if you could get me your things for the ARO footnote prior to that. Let me know if that is feasible. Thanks!

#### Crescente, Angela

From: Sent: Jim Ogilvie <jogilvie@pwrplan.com> Wednesday, April 06, 2011 9:31 AM

To:

Kinder, Debra; Nick Alexander

Cc: Subject: Wacker, Diana; Riggs, Eric; Crescente, Angela; Neal, Susan; Wiseman, Sara

RE: Outstanding items on Project List

Here is the information on the Preliminary Retirements. Please read through and let us know if you have any questions. You should be able to set up and process some test preliminary retirements in DEV on your own.

- To enable, update the Work Order Type table in table maintenance and set the "Allow Prelim Retires" field to "yes" (1).
- Preliminary retirements (equivalent to CCNC for Original Cost Retire) can be entered on the lower portion of the normal WO retirements screen, which is activated once the work order type is set to allow preliminary retirements.
- These retirements are represented on the CPR as a header record with a retirement activity. If is not associated
  with the assets being retired. Basically, it looks like a credit asset. The activity will be treated as a retirement for
  Account Summary and Depr Ledger as well as for tax processing.
- Preliminary retirement pending transactions are created when you run auto 106.
- Post will automatically create the CPR header and create a relationship to other assets with those characteristics.
- Post will also automatically reverse all of the estimated retirements for a WO from the CPR once the <u>first</u> actual retirement is posted on that WO.
- Preliminary retirements are created in the bottom half of the window using the Add Prelim Ret, Copy Prelim Ret,
   Delete Prelim Ret, and Update buttons.
- Preliminary retirements go through the pending and approval process just like other transactions.
- You must have a special property unit (and retirement unit) called "Estimated Retirement" with id = -1. These should already exist in your database, but if they do not, then we can create them for you. That property unit must be related to all companies & utility accounts that you will want to use this functionality for. You must also relate at least one property group to this property unit.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Kinder, Debra [mailto:Debra.Kinder@lge-ku.com]

Sent: Tuesday, 05 April, 2011 2:55 PM

To: Jim Ogilvie; Nick Alexander

Attachment to Response to KU AG-1 Question No. 201 Page 1430 of 2028

Cc: Wacker, Diana; Riggs, Eric; Crescente, Angela; Neal, Susan wiseman, Sara

**Subject:** Outstanding items on Project List

- 1) Inventory Unitization What are the solutions to deal with the inability to allocate RWIP to the depr groups where no warehouse material and no specific retirements exist.
- 2) Improvements to the WO header creation interface to prevent the need to continually map.
- 3) Need process for AIP review by Budget Coordinators before being routed for approval.
- 4) ARO existing reports need changes to formatting
- 5) PPC was to review the problem of file names greater than 60 characters causing files not to attach to email notifications. If the file name cannot be extended then perhaps a warning box to prompt users that the file name is too long could be employed.
- 6) Where do we stand on the O&M charges on work orders?
- 7) We need to supply examples of Unit Estimates not carrying over to a later revision and authorizations in email PDFs not matching the AIP printouts. (Bruce reported these issues will ask him to provide examples)
- 8) We would like to discuss any current PP functionality to record 'Preliminary Retirements' (retirements to coincide with 106 unitizations).

Thanks,

Deb

NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium.

#### Attachment to Response to KU AG-1 Question No. 201 Page 1431 of 2028 Charnas

#### Crescente, Angela

From:

Porter, Janice

Sent:

Wednesday, April 06, 2011 8:55 AM

To:

Crescente, Angela

Subject:

FW: Well Plugging Projects

I should have copied you on this.

From: Porter, Janice

Sent: Wednesday, April 06, 2011 8:54 AM

To: Leenerts, Patricia

Subject: RE: Well Plugging Projects

Pat,

This is a total change in processing procedure and will not only affect this project but other well projects in the future, The projects have in the past been treated like blankets. Spending in the current year affected the budgeted project in that year. I need to talk with others about the change you are proposing.

Janice

From: Leenerts, Patricia

Sent: Wednesday, April 06, 2011 8:50 AM

**To:** Porter, Janice **Cc:** Crescente, Angela

Subject: RE: Well Plugging Projects

Janice, what is the process for obtaining the RAC approval? When should we expect appropriate approvals to take place?

The well names are always what is needed to record that the wells are permanently plugged. With the movement of the dollars to 131113, it seemed wise to verify which wells were being permanently plugged on 124831 and 126421. Also, we will not be able to unitize 124831 or 126421 until the JE is done to move the necessary charges to 131113. Angela, anything else?

Thanks,

Pat

502-627-3811

From: Porter, Janice

Sent: Wednesday, April 06, 2011 8:35 AM

**To:** Leenerts, Patricia **Cc:** Crescente, Angela

Subject: RE: Well Plugging Projects

Pat,

Attachment to Response to KU AG-1 Question No. 201 Page 1432 of 2028 Charnas

This is a RAC issue and will have to be addressed as such. Janice

Angela,

Please tell what you need and in what format if I am unable to get an early decision from the ED RAC.

Thanks. Janice

From: Leenerts, Patricia

Sent: Tuesday, April 05, 2011 5:35 PM

To: Porter, Janice

Subject: RE: Well Plugging Projects

Janice, It is too bad that you were not able to follow through when I sent the email to you on March 17. When should we expect ED RAC approval, if it is needed? I don't know how that process works. The ARO Analyst intends for me to unitize charges remaining on the CP ARO xxx tasks in April, if charges remain on projects 124831 and on project 126421. I will need for you to tell me the names of the wells, whose charges will be left behind and that will be retired on projects 124831 and 126421.

I have attached the 2 journal entries which I prepared in 2010 to move the COR to the ARO COR tasks. Hopefully these entries will help you get started. If you use these as the template, please do not type, delete or add a row near the light yellow shaded lines. The light yellow shaded lines have code in them. Tampering with the coded lines will cause problems during the JE upload and/or posting process.

<< File: 2010-11 J310-0100-1110-Reclass 126421-RETtask ro CP PLUG WELL task.xlsm >> << File: 2010-10 J308-0100-</p> 1010-Move 124831 from RETxx tasks to CP PLUG WELL-xx.xlsm >>

Thanks,

Pat 502-627-3811

From: Porter, Janice

Sent: Tuesday, April 05, 2011 3:35 PM

To: Leenerts, Patricia

Subject: RE: Well Plugging Projects

No I will not. I did not have enough time to find out the effect on whether a revised AIP is needed or not. If it does require a revised AIP, I have to get ED RAC approval before the over-spending occurs.

Janice

From: Leenerts, Patricia

Sent: Tuesday, April 05, 2011 2:40 PM

To: Porter, Janice

Subject: RE: Well Plugging Projects

As I stated in the April 04, 2011 2:02 PM email, today is the last day to upload the JE for March quarter-end closing. Will you be able to make that deadline?

Attachment to Response to KU AG-1 Question No. 201 Page 1433 of 2028 Charnas

Thanks,

Pat 502-627-3811

From: Porter, Janice

Sent: Tuesday, April 05, 2011 2:06 PM

**To:** Leenerts, Patricia **Cc:** Crescente, Angela

Subject: RE: Well Plugging Projects

I am going to have to review this further since the budget was approved for the spending that corresponds with each project. I will have to see if I have to send through revised AIPs and also get approval and at what level the approval changes. Now that the forecast is tied into PP, a whole new set of issues.

I will get back with you.

From: Leenerts, Patricia

Sent: Tuesday, April 05, 2011 10:50 AM

**To:** Porter, Janice **Cc:** Crescente, Angela

Subject: RE: Well Plugging Projects

Janice,

What needs to be moved are the associated dollars that are in the "CP ARO – location" tasks. So, for instance, Glenn is saying that the L. London #3, was started on project 124831 and completed on project 126421. The charges for L. London #3 on project 124831 should be in the CP PLUG WELL-CTR task. So the charges need to be moved from 124831-CP PLUG WELL-CTR to 126421- CP PLUG WELL-CTR.

The most confusing are the charges for Harrington #10. For both projects 126421 and 124831, the charges should be residing in the CP PLUG WELL-DRK task. You can take those charges for both projects directly to 131113.

Thanks,

Pat 502-627-3811

From: Porter, Janice

Sent: Tuesday, April 05, 2011 10:35 AM

To: Leenerts, Patricia

Subject: RE: Well Plugging Projects

Pat,

I am confused as to what you want me to do. The balance on each and every one of the tasks on 126421 that you listed is zero.

Attachment to Response to KU AG-1 Question No. 201 Page 1434 of 2028 Charnas

Thanks, Janice

From: Leenerts, Patricia

Sent: Monday, April 04, 2011 2:02 PM

To: Porter, Janice

Subject: RE: Well Plugging Projects

Status update please on the Well Plugging reclass entry? I need it by Tuesday preferably by noon to allow for uploading. You and your approver will need to be available until the JE is reviewed and uploaded, in case changes need to be made. Reminder to use the correct non-burdened expenditure type.

Don't forget that the explanation at the bottom of the JE needs to be complete so that a person can pick up the JE and understand just from what is written there. Also, a new requirement now exists to include referencing on the JEs. (I just found out about this late Friday.) You will need to scan your approved JE and backup with the referencing and the tic and ties marked between the two. You can email them, but it might be hard to put the tic and tie on the email files. Also, please make sure your JE and back up are scaled no smaller than 60% of normal size for Oracle IPM scanning purposes. Since the backup is usually landscape, it helps to take the left and right margins down to 0.

Let me know if you need any help or if you want me to review the JE prior to submitting to your approver. I can look at an email file or pdf, your choice.

Thanks,

Pat 502-627-3811

From: Sundheimer, Glenn

Sent: Friday, April 01, 2011 9:49 AM

**To:** Porter, Janice **Cc:** Leenerts, Patricia

Subject: RE: Well Plugging Projects

See below.

From: Porter, Janice

Sent: Friday, April 01, 2011 8:15 AM

**To:** Sundheimer, Glenn **Cc:** Leenerts, Patricia

Subject: FW: Well Plugging Projects

Glenn, See my question to Pat and her reply. Thanks,

Janice

From: Leenerts, Patricia

Attachment to Response to KU AG-1 Question No. 201 Page 1435 of 2028

Charnas

Sent: Thursday,	March	31,	2011	5:03	PM
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To: Porter, Janice

Subject: RE: Well Plugging Projects

Glen will have to supply you with the info. I don't think he informed me.

Thanks,

Pat

502-627-3811

From: Porter, Janice

Sent: Thursday, March 31, 2011 5:01 PM

To: Leenerts, Patricia

Subject: RE: Well Plugging Projects

Importance: High

Pat,

How do I know where to put the charges? Project completed on? Am I missing something?

Thanks, Janice

From: Leenerts, Patricia

Sent: Thursday, March 31, 2011 2:39 PM

To: Porter, Janice

Subject: RE: Well Plugging Projects

Janice, I haven't heard from you regarding this JE. I need it by noon on April 5<sup>th</sup> to be able to process it into March's quarter end books. Let me know that you are on track to meet that deadline or earlier (<sup>©</sup>).

Thanks,

Pat

502-627-3811

From: Porter, Janice

Sent: Thursday, March 17, 2011 2:34 PM

To: Leenerts, Patricia

Subject: RE: Well Plugging Projects

Let me see how next week goes. I know I have PP Forecast work to do Monday and Tuesday.

From: Leenerts, Patricia

#### Attachment to Response to KU AG-1 Question No. 201 Page 1436 of 2028

Charnas

Sent: Thursday, March 17, 2011 2:22 PM

**To:** Porter, Janice

Subject: FW: Well Plugging Projects

Janice, can you give me an estimate of when you expect to be able to do the JEs required?

Thanks.

Pat

502-627-3811

From: Leenerts, Patricia

Sent: Wednesday, March 16, 2011 4:53 PM

To: Sundheimer, Glenn

Subject: Well Plugging Projects

You are too good to me. Thanks for the guick response.

As I mentioned I noticed an invoice for TF Davis #6 which is not on either of your lists. Should I review all the charges or assume that invoices may have incorrect info and use your list?

I do remember you indicating that some wells were started, then finished on another project. I will also need the project number that the wells will be finished on.

Actually, the dollars will need to be moved from the "start" project to the "finish" project. Janice will need to provide to me a JE so that I can upload for March's quarter end to be correct.

weii	Field
Harrington #10	Doe Run (plugging started but not completed on this project) Will work on under project
131113	
Keith #3	Doe Run (plugging started but not completed on this project) Will work on under project
131113	
TF Davis #2	Magnolia Deep (plugging started but not completed on this project) Will work on under
project 131113	

C: - 1-1

Doe Run (plugging started but not completed on this project) Will work on under project

Magnolia Upper (plugging started but not completed on this project) Will work on under

Magnolia Upper (plugging started but not completed on this project) Will work on under

Center (plugging started but not completed on this project)) Will work on under project

**Project 124831** 

131113

project 131113 H. Benningfield #7

project 131113 P. Janes #1

Fowler #6 131113 TF Davis #5

Project 126421 187-11

> Well Field

Harrington #10 Doe Run (plugging started but not completed on this project) Continued on 126421 Z. Kidd #1A Center (plugging started but not completed on this project) Completed on 126421 L. London #3 Center (plugging started but not completed on this project) Completed on 126421 Center (plugging started but not completed on this project) Completed on 126421 England Heirs #1A C. Nunn #1 Center (plugging started but not completed on this project) Completed on 126421

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R. Atwell #1 TF Davis #2 126421 Center (plugging started but not completed on this project) Completed on 126421 Magnolia Deep (plugging started but not completed on this project) Continued on

Thanks,

Pat 502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1438 of 2028 Charnas

#### Crescente, Angela

From:

Leenerts, Patricia

Sent:

Tuesday, April 05, 2011 3:19 PM

Cc:

Crescente, Angela

Subject:

RE: Main Replacement Projects

Angela, see what you think about me sending this to Janna...don't skip the red answers below. Let me know.

Janna, I know Angela spoke with you on the phone and cleared up some of the confusion. But I would still like to address some of your questions here...more of a future reference type thing. See my answers below in *Red*.

Also, I want to apologize if my wording came across in a demeaning or insulting way. That was not the intent. Maybe I need to attend a class on word-smithing.

We are still in the growing stages of utilizing PowerPlant (PP) to its fullest. ARO and blankets have been the last to come on-line. Please bear with us as we determine the best and most efficient way for your group and Property Accounting to get the information which we both need. Angela and I discussed what we thought would work for our side. Once I dug into more details last night I realized that wasn't the best option. Which prompted the meeting this morning. Which, unfortunately still left us with some questions for the future.

Thanks,

Pat 502-627-3811

From: Singleton, Janna

Sent: Tuesday, April 05, 2011 10:06 AM

To: Leenerts, Patricia

**Cc:** Crescente, Angela; Stratman, Paul **Subject:** RE: Main Replacement Projects

Pat/Angela,

Yes, I was "made aware by Angela" that the retirement would have to go into a different task/account, but I have not heard anything about doing a MISC AIP for all of the retirements. My email I sent last night was the first notification that we needed the Misc AIP Form – which Angela mentioned on the phone this morning that we no longer believe that I need. I was under the impression that a MISC AIP is for small tool purchases. I was requesting a Misc AIP Form (not a Misc AIP). The Misc AIP Form is used to define activity when a project has multiple items hitting the same tasks when that information was not on the original AIP or when the plans may have changed. The CP ARO 2011 task would have been this type of task. The meeting this morning, which Angela mentioned to you on the phone, eliminates the need for the Misc AIP Form (at least until we have further discussion). When multiple locations were going to be charged to the CP ARO 2011, Angela and I thought, as of yesterday, that I would need the Misc AIP Form to know what was retired on that task. This was more of a timing issue between when the charges hitting for the retirement and the installation. After some additional work last night and the meeting we had today, the Misc AIP Form may not be the right choice for us, as Angela mentioned to you today. Angela and I will have some more meetings in-house and then we will discuss your needs before a final decision is made. Why do we need to do one for retirements? Please forward the policy so that I can read it and familiarize myself with it.

As for the tax district/location, the majority of these are under a generic location "Gas Distribution Mains".

Angela mentioned to me that you are familiar with the Detail screen in PowerPlant (PP) as you also do work with

Attachment to Response to KU AG-1 Question No. 201 Page 1439 of 2028

software, if I'm remembering correctly. The information I West requesting on location is the PP Asset Location on the detail tab. On the Detail tab the Major location will show Gas Distribution Mains as you indicated. Also, on the PP Detail tab you will find the Asset Location, which is similar to the Tax District description in Oracle.

I will have to defer to Paul on some of this information as I can only make educated guesses as to the detail and timing of the work. These three projects that you mention are part of a large initiative. I am not certain that PMR work is strictly emergency (Paul would have to correct me) – I believe it is just used for Priority Main work of which there is less work than LSMR. Also, MAN414 is complete and there shouldn't be any work after 2010. It should have closed out on 3/31/11 per PP; you won't need to work on this one going forward. This initiative has been going on since 2005, why are you now asking for all of this information?

Because it seems that Main Replacement has suddenly come onto your radar, I am going to set up a meeting between the four of us to go through what actually needs to be done on each of these projects going forward.

Janna



Think Green! Before printing this e-mail, ask the question, is it necessary?



Misc. Proj. AIP Form Revised.x...

From: Leenerts, Patricia

Sent: Monday, April 04, 2011 7:30 PM

To: Singleton, Janna Cc: Crescente, Angela

Subject: Main Replacement Projects

#### Janna,

You were made aware, by Angela, to start charging cut, cap and purge retirements to the CP ARO YYYY task. As a part of this process I will need you to provide to me a list of which locations had retirements and what equipment was retired. You may need to track as charges hit, but you can simply send me an email or complete a Miscellaneous AIP Form on a manageable schedule which we will need to work out. This will start with the CP ARO 2011 task which, effective at the end of March, should be the only task which you will be charging the cut, cap and purge retirements. After I have processed the Journal Entry to move the Mar 2010 and prior charges, you should close all 108901 tasks related to cut, cap and purge retirements.

I believe that the majority of the work is cyclical for MAN414 and LSMR414. What time of the year is the low point, least amount of work/activity, happening? The off-season would be the best time for me to process the additions and retirements. We can work together for the locations as what I need are the Utility Account and the PP Asset Location (Tax District in Oracle) by material (plastic, steel) and size. I believe that summarizing the information might be easier for you.

I believe that the PMR project is for emergencies, so I'll have to decide on a schedule for this project and just stick to it. Any timing suggestions for PMR414?

Let me know if you have any questions/comments. I appreciate your help to properly record our assets additions and retirements.

<< File: Misc. Proj. AIP Form Revised.xls >>

Thanks,

			Miscellaneous Project	Informat	ion She	et				Original Revised
EON U.S. Services Co.  Louisville Gas & Electric Co.  Other:					Ken	tucky Utilitře:	s Company			
Name of Pro	ject/Task:			<del>, ,</del>						
Date Requested: Project Number: Task Number:										
Expected Start Date Expected In-service Date: Expected Completion Date:										
Project Manage	er:			Phone:						
Pi	roduct Code		Resp. Center				L	ocation #		
			REASONS AND DETAILED DES (include sketch no.,		F PROJEC	Г				
					······································					
Task#	UOP#		INVESTMENT MA Description	ATERIALS				Quantity	Total	Cost
						То	tal		-	-
	1		RETIRED EQUIPMENT (	OR MATERIA	ALS)			riginal	Vintage	Т
Task#	UOP#		Description				Projec	t Number	Year	Qty
						:				
	ŀ					i				1
			SALVAGE & TRANSFERI	RED EQUIPA	MENT Salvage	Salvage			T	
Task#	UOP#		Description		Stock (return to storeroom)	Junk (so to 3'rd Party)	d	Salvaged Equipment	Transf Equip	
I SON II	551 #		Soverphon		2.010100111)	, (114)		- Jaikutout	Equipi	
				·	^	_			1	

Attachment to Response to KU AG-1 Question No. 201 Page 1441 of 2028 Charnas

# Crescente, Angela

From:

Koellner, Corey

Sent:

Thursday, April 21, 2011 5:12 PM

To: Subject: Crescente, Angela ARO Regulatory Assets

Follow Up Flag: Flag Status:

Follow up Completed

#### Angela --

I'm preparing the Regulatory Asset/Liab information that will be included in the Form 3 filing. Karen previously completed this information and during our transition she indicated I should reach out to you to assist if I identify any ARO assets with credit activity. That being said, the four items below have credit activity during 1Q11:

Account	Account	Je Name	Line Description	Debits
182317	OTHER REGULATORY ASSETS ARO -	J309-0100-0111 Adjustment USD 01-	Journal Import Created	0.00
	GENERATION	JAN-11		
182317	OTHER REGULATORY ASSETS ARO -	J315-0100-0211 Adjustment USD 01-	Journal Import Created	0.00
	GENERATION	FEB-11		
182317	OTHER REGULATORY ASSETS ARO -	J319-0100-0311 Adjustment USD 01-	Journal Import Created	0.00
	GENERATION	MAR-11		
182317	OTHER REGULATORY ASSETS ARO -	PP ARO USD 01-MAR-11	Journal Import Created	6,347,740.
	GENERATION		-	

If you could let me know if these items are accurately included as credits, it would be appreciated. I'm assuming you provided Karen similar information in the past and this email will make sense – if it doesn't, however, please let me know.

#### Thanks!

Corey Koeilner
Regulatory Accounting & Reporting
LG&E and KU Energy LLC
Direct: (502) 627-2965
corey.koellner@lge-ku.com

Attachment to Response to KU AG-1 Question No. 201 Page 1442 of 2028 Charnas

#### Clark, Ed

From: Wiseman, Sara

Sent: Sunday, January 16, 2011 3:02 PM

To: Charnas, Shannon

Cc: Crescente, Angela; Pienaar, Lesley Subject: RE: ARO tab of reporting package

#### Shannon:

I will work with Angela to add FCD on Monday morning. Additionally, if Lesley can provide more direction on the PPL account numbers, we will also take care of that. We can contact someone at PPL to find out about if we need to—I'm copying Lesley on this so maybe she can advise.

I'm not sure what is meant by LGE and KU not matching the supporting documentation, but I will try to catch you early tomorrow so you can show me.

I'm guessing your last comment has to do with the mapping as opposed to the dollar amounts. Once Angela's schedule included FCD it will tie in total to the amounts that Greg is showing in his file (on 2 different lines).

From: Charnas, Shannon

**Sent:** Sunday, January 16, 2011 1:54 PM **To:** Crescente, Angela; Wiseman, Sara **Subject:** ARO tab of reporting package

It looks like FCD is not included in this information. Also, it looks like the LG&E and KU numbers do not tie to the supporting documentation. Also, the instructions indicate PPL account numbers should be listed. Please make appropriate updates in the Final version and let me know when updated (by noon tomorrow).

It looks like you and Greg do not have the same ARO accounts and RWIP accounts rolling up to the balance. Difference appears to be on LG&E and FCD.

#### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

#### Attachment to Response to KU AG-1 Question No. 201 Page 1443 of 2028 Charnas

#### Clark, Ed

From:

Charnas, Shannon

Sent:

Sunday, January 16, 2011 2:37 PM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

RE: ARO tab of reporting package

I just asked Lesley, she can't remember. She is going to confirm. Just seems odd that PPL included it on the file and then doesn't really need it (although I know this is true in at least one case).

#### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Sunday, January 16, 2011 2:26 PM

To: Charnas, Shannon Cc: Crescente, Angela

Subject: RE: ARO tab of reporting package

Shannon: We will look into what you are asking about—I can immediately tell you that Lesley said we did not need to include PPL account numbers when we asked about it.

From: Charnas, Shannon

Sent: Sunday, January 16, 2011 1:54 PM To: Crescente, Angela; Wiseman, Sara Subject: ARO tab of reporting package

It looks like FCD is not included in this information. Also, it looks like the LG&E and KU numbers do not tie to the supporting documentation. Also, the instructions indicate PPL account numbers should be listed. Please make appropriate updates in the Final version and let me know when updated (by noon tomorrow).

It looks like you and Greg do not have the same ARO accounts and RWIP accounts rolling up to the balance. Difference appears to be on LG&E and FCD.

#### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

Attachment to Response to KU AG-1 Question No. 201 Page 1444 of 2028 Charnas

#### Clark, Ed

From: Wiseman, Sara

**Sent:** Sunday, January 16, 2011 2:26 PM

To: Charnas, Shannon Cc: Crescente, Angela

Subject: RE: ARO tab of reporting package

Shannon: We will look into what you are asking about—I can immediately tell you that Lesley said we did not need to include PPL account numbers when we asked about it.

From: Charnas, Shannon

**Sent:** Sunday, January 16, 2011 1:54 PM **To:** Crescente, Angela; Wiseman, Sara **Subject:** ARO tab of reporting package

It looks like FCD is not included in this information. Also, it looks like the LG&E and KU numbers do not tie to the supporting documentation. Also, the instructions indicate PPL account numbers should be listed. Please make appropriate updates in the Final version and let me know when updated (by noon tomorrow).

It looks like you and Greg do not have the same ARO accounts and RWIP accounts rolling up to the balance. Difference appears to be on LG&E and FCD.

#### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

Attachment to Response to KU AG-1 Question No. 201 Page 1445 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Sunday, January 16, 2011 1:54 PM

To: Subject: Crescente, Angela; Wiseman, Sara

ARO tab of reporting package

It looks like FCD is not included in this information. Also, it looks like the LG&E and KU numbers do not tie to the supporting documentation. Also, the instructions indicate PPL account numbers should be listed. Please make appropriate updates in the Final version and let me know when updated (by noon tomorrow).

It looks like you and Greg do not have the same ARO accounts and RWIP accounts rolling up to the balance. Difference appears to be on LG&E and FCD.

# Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

Attachment to Response to KU AG-1 Question No. 201 Page 1446 of 2028 Charnas

#### Clark, Ed

From: Jim Dahlby <idahlby@pwrplan.com> Sent:

Monday, January 10, 2011 7:31 AM

Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' To:

Wacker, Diana; Kinder, Debra; Wiseman, Sara Cc:

RE: ARO Depr Group Adjustment Subject:

Angela-

That is correct, I'll add a maintenance request to determine the best approach.

Jim Dahlby PowerPlan Consultants jdahlby@pwrplan.com (678) 269-7950

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 05 January, 2011 12:27 PM To: Jim Dahlby; Josh Hirschel; Jim Ogilvie; support Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

Jim,

I have confirmed that what I am trying to do works as expected as long as ARO processing runs before depreciation gets calculated. When we get through December's close, I will do more testing and send you information about what I have found out. This is the second time I have seen problems with reg entries when depreciation is calculated before we close. If you already know that this is going on, just let me know. I'm just concerned that this might not be something people know about and they may have problems down the road. I work very closely with our closing people so we know to watch for that if I am doing unordinary things to the AROs (which I have been doing a lot of lately), or I guess it could be any assets that are affected by the reg entries.

Thanks, Angela

From: Crescente, Angela

Sent: Friday, December 31, 2010 7:51 PM

To: 'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

Jim,

I just tried one more time and made sure that the current month's depreciation calculation had not been ran prior to closing the books and it looks like it worked. I would like to try this one more time with a clean refresh of PTAXDEV on Monday just to be sure. It appears that the problem lies in whether or not depreciation calculation is clicked on before the closing process actually starts. Have you seen this before or would you expect that?

As soon as I get finished testing on Monday, I will send you an email to let you know how it turned out. So, for the time being, please disregard my message I sent earlier today and I will keep you posted.

Thanks and Happy New Year!

#### Angela

From: Crescente, Angela

Sent: Friday, December 31, 2010 3:59 PM

**To:** 'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

I have tried a few times to do what we talked about on the phone, but it appears that the reg entries are only set up to look at current month's expense. Is there a way I can set up some new reg entries to deal with adjustments for these special cases only? In other words, one reg entry would pick up current month depr (as always) and another reg entry would pick up the adjustment for this special thing. Then, I would be able to disable the special reg entries by removing the AROs until next time I need to do a depr adjustment? If this is possible, please let me know. We would like to have this corrected for December's work unless this is just not possible.

Thanks, Angela

From: Jim Dahlby [mailto:jdahlby@pwrplan.com] Sent: Tuesday, December 21, 2010 11:33 PM

To: Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

**Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara **Subject:** RE: ARO Depr Group Adjustment

I didn't follow why the transition amount for October would be booked to Reg asset account instead of Accum Reserve. Under original transition rules, the entry was CR 108 and DR 182, so I would have expected something along those lines for this case.

Feel free to give me a call to discuss the accounting further.

Jim Dahlby PowerPlan Consultants <u>jdahlby@pwrplan.com</u> (678) 269-7950

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 21 December, 2010 03:38 PM **To:** Jim Dahlby; Josh Hirschel; Jim Ogilvie; support **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

Well, technically, because of the ARO transition process, the expense amount for each month would be correct, but the reserve amount is not quite right because an extra ½ month booked (essentially October's depreciation). I was hoping I could debit 108107 and credit 182317 (not posting to GL) in order to fix the ledger and my regulatory account at the same time. I fixed these on the regular GL, but I am trying to fix PowerPlant now. I was wanting to changing the reserve without changing the monthly expense. So, I guess this isn't possible? Does that mean I will have to do manual reg entries to fix the 182 (regulatory asset) side as well?

From: Jim Dahlby [mailto:jdahlby@pwrplan.com] Sent: Tuesday, December 21, 2010 3:23 PM

To: Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

# Attachment to Response to KU AG-1 Question No. 201 Page 1448 of 2028

No, when you adjust the reserve it is going to adjust the future depreciation expense. This is the nature of using individual asset depreciation using a Remaining Life calculation, the monthly calculation is Net Book/Remaining Life, so if you adjust the reserve then it changes the net book value, thus changing the future depreciation expense. If you made the adjustment from depreciation expense to another account other than reserve then the reserve would be right.

Why do you want it to not change the depreciation answer?

Jim Dahlby PowerPlan Consultants <u>jdahlby@pwrplan.com</u> (678) 269-7950

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 21 December, 2010 02:58 PM **To:** Josh Hirschel; Jim Ogilvie; Jim Dahlby; support **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: ARO Depr Group Adjustment

#### All:

In November, we set up our new AROs as transition AROs for Purchase Accounting in order to capture November's accretion. In doing so, the system (with good reason) booked 1½ months of depreciation. One full month was treated as a reserve adjustment and the other ½ month ran through as current deprexpense. Due to Purchase Accounting requirements, I reversed the extra ½ month of depreciation on a top-side entry to make the GL correct.

I need to go back and change the depr ledger to reflect this. However, I know that depr adjustments on individually depreciated assets that are not fully depreciated doesn't adjust quite how we would like for it to. Is there a way that we can adjust the depr ledger for a one-time adjustment without it recalculating a different depr expense amount over the remaining life?

I have attached screenshots to show what I am talking about. The first one shows the \$31,807.14 in the reserve adjustment column for the set up of the transition ARO and \$15,903.56 for the current month's ½ depr expense. The second one shows the (\$15,903.56) depr adjustment that I performed in DEV. I used reserve adj as the activity code. The current depr expense for the month changes to \$31,857.65 instead of \$31,807.14 like I wanted it to. Although this doesn't seem to be much of an amount different, this will be need to be done to all of the 100 or so assets that I set up the transition AROs for and that could add up to a lot of difference. Is there any way to correct the reserve to reduce it without changing the monthly depr expense?

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Thanks,

Angela

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Attachment to Response to KU AG-1 Question No. 201 Page 1449 of 2028 Charnas

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#### Attachment to Response to KU AG-1 Question No. 201 Page 1450 of 2028 Charnas

## Clark, Ed

From:

Leichty, Doug

Sent:

Monday, January 10, 2011 7:29 AM

To:

Crescente, Angela

Subject:

RE: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

The reason for this monthly file is to calculate thirteen month average balances. The Discoverer report is also helpful and if it is not too much trouble I would like that also. Thanks.

From: Crescente, Angela

Sent: Sunday, January 09, 2011 2:56 PM

To: Leichty, Doug

Subject: RE: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

Doug:

This replaces the piece of paper with ending balances that I used to give you because everything is on here, right? Or are you going to still need the Discoverer report that I used to give you as well?

Thanks, Angela

From: Leichty, Doug

Sent: Wednesday, December 29, 2010 9:35 AM

**To:** Crescente, Angela **Cc:** Wiseman, Sara

Subject: FW: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

I will need the attached file for the period ending December 31, 2010 by February 1, 2010.

Thanks, Doug

From: Crescente, Angela

Sent: Friday, July 16, 2010 9:35 AM

To: Leichty, Doug

Subject: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

Attachment to Response to KU AG-1 Question No. 201 Page 1451 of 2028 Charnas

# Clark, Ed

From:

Daly, Karen

Sent:

Friday, January 07, 2011 12:03 PM

To:

Crescente, Angela

Subject:

FW: ARO Rollforward with my summary for GAAP cash flows

FYI

From: Fackler, Andrea

Sent: Friday, January 07, 2011 11:56 AM

To: Daly, Karen

Subject: ARO Rollforward with my summary for GAAP cash flows



ARO Rollforward LGE KU Balanc...

Andrea Fackler, CPA
Accounting Analyst II
LG&E and KU Energy, LLC
220 W. Main Street, 9th Floor
Louisville, KY 40202
P. (502) 627-3442

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#### Attachment to Response to KU AG-1 Question No. 201 Page 1454 of 2028 Charnas

### Clark, Ed

From:

Crescente, Angela

Sent:

Wednesday, January 05, 2011 12:27 PM 'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

To: Cc:

Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject:

RE: ARO Depr Group Adjustment

Jim,

I have confirmed that what I am trying to do works as expected as long as ARO processing runs before depreciation gets calculated. When we get through December's close, I will do more testing and send you information about what I have found out. This is the second time I have seen problems with reg entries when depreciation is calculated before we close. If you already know that this is going on, just let me know. I'm just concerned that this might not be something people know about and they may have problems down the road. I work very closely with our closing people so we know to watch for that if I am doing unordinary things to the AROs (which I have been doing a lot of lately), or I guess it could be any assets that are affected by the reg entries.

Thanks, Angela

From: Crescente, Angela

Sent: Friday, December 31, 2010 7:51 PM

**To:** 'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

Jim,

I just tried one more time and made sure that the current month's depreciation calculation had not been ran prior to closing the books and it looks like it worked. I would like to try this one more time with a clean refresh of PTAXDEV on Monday just to be sure. It appears that the problem lies in whether or not depreciation calculation is clicked on before the closing process actually starts. Have you seen this before or would you expect that?

As soon as I get finished testing on Monday, I will send you an email to let you know how it turned out. So, for the time being, please disregard my message I sent earlier today and I will keep you posted.

Thanks and Happy New Year! Angela

From: Crescente, Angela

Sent: Friday, December 31, 2010 3:59 PM

To: 'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

I have tried a few times to do what we talked about on the phone, but it appears that the reg entries are only set up to look at current month's expense. Is there a way I can set up some new reg entries to deal with adjustments for these special cases only? In other words, one reg entry would pick up current month depr (as always) and another reg entry would pick up the adjustment for this special thing. Then, I would be able to disable the special reg entries by removing the AROs until next time I need to do a depr adjustment? If this is possible, please let me know. We would like to have this corrected for December's work unless this is just not possible.

Attachment to Response to KU AG-1 Question No. 201 Page 1455 of 2028 Charnas

Thanks, Angela

From: Jim Dahlby [mailto:jdahlby@pwrplan.com] Sent: Tuesday, December 21, 2010 11:33 PM

To: Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

I didn't follow why the transition amount for October would be booked to Reg asset account instead of Accum Reserve. Under original transition rules, the entry was CR 108 and DR 182, so I would have expected something along those lines for this case.

Feel free to give me a call to discuss the accounting further.

Jim Dahlby PowerPlan Consultants <u>jdahlby@pwrplan.com</u> (678) 269-7950

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 21 December, 2010 03:38 PM **To:** Jim Dahlby; Josh Hirschel; Jim Ogilvie; support **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

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**From:** Jim Dahlby [mailto:jdahlby@pwrplan.com] **Sent:** Tuesday, December 21, 2010 3:23 PM

To: Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

No, when you adjust the reserve it is going to adjust the future depreciation expense. This is the nature of using individual asset depreciation using a Remaining Life calculation, the monthly calculation is Net Book/Remaining Life, so if you adjust the reserve then it changes the net book value, thus changing the future depreciation expense. If you made the adjustment from depreciation expense to another account other than reserve then the reserve would be right.

Why do you want it to not change the depreciation answer?

Jim Dahlby
PowerPlan Consultants
jdahlby@pwrplan.com
(678) 269-7950

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 21 December, 2010 02:58 PM **To:** Josh Hirschel; Jim Ogilvie; Jim Dahlby; support **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: ARO Depr Group Adjustment

Attachment to Response to KU AG-1 Question No. 201 Page 1456 of 2028 Charnas

All:

In November, we set up our new AROs as transition AROs for Purchase Accounting in order to capture November's accretion. In doing so, the system (with good reason) booked 1½ months of depreciation. One full month was treated as a reserve adjustment and the other ½ month ran through as current deprexpense. Due to Purchase Accounting requirements, I reversed the extra ½ month of depreciation on a top-side entry to make the GL correct.

I need to go back and change the depr ledger to reflect this. However, I know that depr adjustments on individually depreciated assets that are not fully depreciated doesn't adjust quite how we would like for it to. Is there a way that we can adjust the depr ledger for a one-time adjustment without it recalculating a different depr expense amount over the remaining life?

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< <angela0001.pdf>&gt;</angela0001.pdf>	
Thanks,	
Angela	
NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.c Please update your address book accordingly.	om.

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Attachment to Response to KU AG-1 Question No. 201 Page 1458 of 2028 Charnas

## Clark, Ed

From:

Stratman, Paul

Sent:

Tuesday, January 04, 2011 8:01 AM

To: Subject: Crescente, Angela RE: LSMR414 - ARO

What is "normal" and what is "ARO"?

All the work is cut, cap and purge associated with LSMR414.

From: Crescente, Angela

Sent: Monday, January 03, 2011 5:13 PM

To: Stratman, Paul

Subject: LSMR414 - ARO

Paul,

I saw in 2011, LSMR414 removal costs are budgeted for \$263,340. Is all of that cut, cap, and purge like we discussed during the revaluation? In other words, is all of the cost of removal budget going to be ARO related or will it be split between "normal" cost of removal and ARO removal? If it is going to be split, could you give me an approximate estimate between the two?

I have to split out expected the ARO cost of removal between short-term and long-term before Thursday and anything budgeted for next year would be considered short-term. I apologize for the short notice, but if you could let me know by COB, Wednesday, January 5<sup>th</sup> that would be much appreciated.

As always, I appreciate your help! Please feel free to call if you have any questions.

Thanks!

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1459 of 2028 Charnas

## Clark, Ed

From:

Crescente, Angela

Sent:

Monday, January 03, 2011 5:13 PM

To: Subject: Stratman, Paul LSMR414 - ARO

Paul,

I saw in 2011, LSMR414 removal costs are budgeted for \$263,340. Is all of that cut, cap, and purge like we discussed during the revaluation? In other words, is all of the cost of removal budget going to be ARO related or will it be split between "normal" cost of removal and ARO removal? If it is going to be split, could you give me an approximate estimate between the two?

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As always, I appreciate your help! Please feel free to call if you have any questions.

Thanks!

Angela

# Clark, Ed

From:

Crescente, Angela

Sent:

Friday, December 31, 2010 7:51 PM

To: Cc: 'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject:

RE: ARO Depr Group Adjustment

Tracking:

Recipient 'Jim Dahlby'

'Josh Hirschel' 'Jim Ogilvie'

'support' Wacker, Diana

Kinder, Debra Wiseman, Sara Read

Read: 1/1/2011 10:00 AM Read: 1/3/2011 7:29 AM

Read: 12/31/2010 7:58 PM

Jim,

I just tried one more time and made sure that the current month's depreciation calculation had not been ran prior to closing the books and it looks like it worked. I would like to try this one more time with a clean refresh of PTAXDEV on Monday just to be sure. It appears that the problem lies in whether or not depreciation calculation is clicked on before the closing process actually starts. Have you seen this before or would you expect that?

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Thanks and Happy New Year!

Angela

From: Crescente, Angela

Sent: Friday, December 31, 2010 3:59 PM

To: 'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

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Thanks, Angela

From: Jim Dahlby [mailto:idahlby@pwrplan.com] Sent: Tuesday, December 21, 2010 11:33 PM

To: Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

# Attachment to Response to KU AG-1 Question No. 201 Page 1461 of 2028

I didn't follow why the transition amount for October would be booked to Reg asset account instead of Accum Reserve. Under original transition rules, the entry was CR 108 and DR 182, so I would have expected something along those lines for this case.

Feel free to give me a call to discuss the accounting further.

Jim Dahlby PowerPlan Consultants jdahlby@pwrplan.com (678) 269-7950

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 21 December, 2010 03:38 PM **To:** Jim Dahlby; Josh Hirschel; Jim Ogilvie; support **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara **Subject:** RE: ARO Depr Group Adjustment

Well, technically, because of the ARO transition process, the expense amount for each month would be correct, but the reserve amount is not quite right because an extra ½ month booked (essentially October's depreciation). I was hoping I could debit 108107 and credit 182317 (not posting to GL) in order to fix the ledger and my regulatory account at the same time. I fixed these on the regular GL, but I am trying to fix PowerPlant now. I was wanting to changing the reserve without changing the monthly expense. So, I guess this isn't possible? Does that mean I will have to do manual reg entries to fix the 182 (regulatory asset) side as well?

**From:** Jim Dahlby [mailto:jdahlby@pwrplan.com] **Sent:** Tuesday, December 21, 2010 3:23 PM

To: Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

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Why do you want it to not change the depreciation answer?

Jim Dahlby PowerPlan Consultants <u>idahlby@pwrplan.com</u> (678) 269-7950

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 21 December, 2010 02:58 PM **To:** Josh Hirschel; Jim Ogilvie; Jim Dahlby; support **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: ARO Depr Group Adjustment

#### All:

In November, we set up our new AROs as transition AROs for Purchase Accounting in order to capture November's accretion. In doing so, the system (with good reason) booked 1½ months of depreciation. One full month was treated as a reserve adjustment and the other ½ month ran through as current deprexpense. Due to Purchase Accounting requirements, I reversed the extra ½ month of depreciation on a top-side entry to make the GL correct.

Attachment to Response to KU AG-1 Question No. 201 Page 1462 of 2028

I need to go back and change the depr ledger to reflect this. However, I know that depr adjustments on individually depreciated assets that are not fully depreciated doesn't adjust quite how we would like for it to. Is there a way that we can adjust the depr ledger for a one-time adjustment without it recalculating a different depr expense amount over the remaining life?

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expense?
< <angela0001.pdf>&gt;</angela0001.pdf>
Thanks,
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### Clark, Ed

From:

Crescente, Angela

Sent: Friday, December 31, 2010 3:59 PM

'Jim Dahlby'; 'Josh Hirschel'; 'Jim Ogilvie'; 'support' To: Wacker, Diana; Kinder, Debra; Wiseman, Sara Cc:

Subject: RE: ARO Depr Group Adjustment

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To: Crescente, Angela; 'Josh Hirschel'; 'Jim Ogilvie'; 'support'

Cc: Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: RE: ARO Depr Group Adjustment

# Attachment to Response to KU AG-1 Question No. 201 Page 1464 of 2028

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Why do you want it to not change the depreciation answer?

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**Sent:** Tuesday, 21 December, 2010 02:58 PM **To:** Josh Hirschel; Jim Ogilvie; Jim Dahlby; support **Cc:** Wacker, Diana; Kinder, Debra; Wiseman, Sara

Subject: ARO Depr Group Adjustment

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Angela

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Attachment to Response to KU AG-1 Question No. 201 Page 1465 of 2028 Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1466 of 2028 Charnas

# Clark, Ed

From:

Sent:

To: Subject:

PowerPlantAlerts@eon-us.com Thursday, December 30, 2010 6:00 AM Crescente, Angela PowerPlant Alerts - E.ON - AIP - ARO

Project 130727 has ARO

login to powerplant

Attachment to Response to KU AG-1 Question No. 201 Page 1467 of 2028 Charnas

## Crescente, Angela

From:

Leenerts, Patricia

Sent:

Monday, March 28, 2011 8:34 PM

To:

Stratman, Paul

Cc:

Singleton, Janna; Crescente, Angela

Subject:

Gas Blanket Project questions - get back to me on Tuesday - if you can - as early as possible

#### Paul,

Please answer the 3 questions at the top of the attached spreadsheet before digging into the following questions within this email. The questions on the spreadsheet are what I would appreciate getting by mid day on Tuesday.

When there are retirements that may be replacements, is the old pipe cut, capped and purged? Then the removal charges would be ARO CP charges to 108799. Or are they typically fully replaced and attached to the old pipe? Any time that there is cut, cap and purge there needs to be an ARO CP task setup and charged.

RRCSxxxG needs an AOR task, at least, when the "house being demolished and gas service needs to be cutout at the main connection". Are cutouts always cut, cap and purge? What about cutouts on LSMR414?

If there are retirements on NBGCSxxx or NBGSxxx, then are they cut, cap and purge? If so, need ARO CP tasks.



Book2.xls

#### Attachment to Response to KU AG-1 Question No. 201 Page 1468 of 2028 Charnas

Project GME406 PAT

analyst

PA status worked month job\_task\_id MAR/APR

work\_order\_number 84938R02

work\_st chg de gl\_account

fund\_proj\_description

func\_class

work\_order\_type

amount

PAT

You say retire like...but I don't see an add for this task number. Usually when we say like, we automatically retire a quantity to match each Add/investment task. Is that what you thought that I meant?

GME406-84938

open 200808 108901-RETIREMENT - RWIP

GAS MAIN EXT 406

Gas Distribution Gas Dist Blanket Noninv Issue

\$455.78

RCST406G RCST406G PAT

113772R02 MAR/APR MAR/APR 45074R02

RCST406G-113772 RCST406G-45074

open 200311 108901-RETIREMENT - RWIP open 200503 108901-RETIREMENT - RWIP Customer requested - Gas Customer requested - Gas Gas Distribution Gas Dist Blanket Noninv Issue Gas Distribution Gas Dist Blanket NonInv Issue -\$18,292.76

-\$350,89

Here's the table I am referring to above:

		Normal Cost of Removal - 108901	ARO -108799	Normai Cost of Removal - 108901		What type of work is done on this blanket?	Are there usually retirements? Or should I just retire "like" – meaning retire the same (size, material, etc) assets that I add to the books? Or just retire when there are 108 charges?
ASBLY419	LG&E	\$	\$	No	No:	Regulator facility replacements - project complete (2009?), no additional charges.	liko
GME406	GAS MAIN EXT 406	\$	\$		No	New business, gas main extenstions.	Retirements not typical.
LSMR414	Large Scale Main Replacements	\$	\$	YES	No	Main Replacement	Like length, but size and materials are different.
MAN414	ELECTRIC/GAS MANHOLE CONFLICTS	\$	s	No	No	Main Replacement	Like length, but size and materials are different.
NBGCS419	NEW BUS CONNECT SERV 419	\$	\$	No	No	New business, gas service installations	Retirements not typical.
NBGS341	INSTALL GAS SVC-JOINT TRENCH	\$	\$	No	No	New business, joint trench work.	Retirements not typical.
NBGS419	NEW BUS GAS SERV 419	\$	s	No	No	New business, gas service installations	Retirements not typical.
NBGS421	NEW BUS GAS SERV 421	\$	\$	No	No	New business, gas service installations	Retirements not typical.
NBGS422	NEW BUS GAS SERV 422	\$	\$	No	No	New business, gas service installations	Retirements not typical.
PMR414	Priority Main Replacement	\$	\$	YES	No	Main Replacement	Like length, but size and materials are different.
RCST406G	Customer requested - Gas	\$	\$	YES	No	Main Relocations (customer request pipeline relocation)	Like
RRCS419G	REP CO GAS SERV 419	\$	\$	YES	No	Service line replacements and cutouts	This one is a bit complicated, Replacement have a like retirement, but individual retirements are also charged to this project (i.e. house being demolished and gas service needs to be cutout at the main connection).
RRCS421G	REM/REPL CO GAS SERVICE- 421	\$	\$	No	No	Service line replacements and cutouts	
RRCS422G	REM/REPL CO GAS SERVICE- 422	\$	s	No	No	Service line replacements and cutouts	
SYSEN406G	System enhancements - Gas	\$	\$	YES	No	System enhancements	Retirements not typical, but when they occur, they are generally like length, size and material, but not always.
TBRD419G	MISC GAS MAIN LEAK REPAIR/REM	\$	\$	YES	No	Leak repair (misc. main cutouts, valve replacements).	Typically like, but not always retirements and installation 1 for 1.

## Crescente, Angela

From: Wiseman, Sara

Sent: Wednesday, January 12, 2011 8:20 AM

To: Crescente, Angela Subject: FW: discount rate

Attachments: Kentucky Regulated WACC (as of 12.31.10).xls

For future reference....I'm not sure if this would be ARO related or not....

From: Charnas, Shannon

**Sent:** Wednesday, January 12, 2011 8:19 AM **To:** Wiseman, Sara; Mazza, Frank; Raible, Eric

Subject: FW: discount rate

FYI, this is our current discount rate from PPL and we should be getting updates each quarter. There is more information in this file, but the rate calculation is included.

#### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

From: Garrett, Chris

Sent: Tuesday, January 11, 2011 12:26 PM

To: Elmore, Barry; Charnas, Shannon; Scott, Valerie

Subject: FW: discount rate

I know your teams have inquired as to the discount rate to apply now that we are part of the PPL team. The attached file will show that we should be using 6.9% as of 12/31/2010. It is my understanding that PPL will supply a quarterly update of the WACC going forward.

Chris

From: Reither II, Joseph [mailto:JReither@pplweb.com]

Sent: Tuesday, January 11, 2011 10:30 AM

To: Garrett, Chris

Subject: RE: discount rate

Chris.

Here is the discount rate updated for your testing date of 12.31.2010. I just reviewed it this morning and the risk free rate is up 80 basis points from Sept which has caused the WACC to rise accordingly. Let me we know if there is any additional backup that you will need.

I will be setting up a meeting for tomorrow for a couple folks from here to discuss impairment testing with your team. We would like to have the meeting to discuss methodology because Vince Sorgi and Mark Cunningham feel it is important (and best practice) that we use consistent methodology across all reporting units (I am about to head to a meeting to discuss this same topic with our WPD team). Additionally, E&Y is going to want to see a sum of the parts analysis that reconciles to PPL's market Cap. It is a sanity check that the valuation teams from the audit firms use support the results of the test. So, we will need to make sure the values of each reporting unit fall in line.

Attachment to Response to KU AG-1 Question No. 201 Page 1470 of 2028

Is there a particular time to works best for you?	Charnas
Thanks,	
Joe	
From: Garrett, Chris [mailto:Chris.Garrett@lge-ku.com] Sent: Tuesday, January 11, 2011 10:05 AM To: Reither II, Joseph Subject: discount rate	
Joe,	
Can you go ahead and provide me the discount rate f	for 12/31/2010 for LKE as discussed last week?
Thank you,	
Chris	
NOTE: The extension for all E.ON U.S. e-mail addr Please update your address book accordingly.	resses has changed from @eon-us.com to @lge-ku.com.
addressed or copied. It may contain material of conf	ing of any action in reliance upon, this information by is not allowed. If you received this message and the

storage medium.

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Goodwill Impairment Analysis

Kentucky Regulated Weighted Average Cost of Capital Analysis

Testing Date: September 30, 2010

(Millions of Dollars, except per share data)

Comparable Compaies	<u>Ticker</u>	S&P <u>Ratings</u>	Debt Outstanding (1)	Average Stock Price (2)	Shares Outstanding (1)	Market <u>Value of Equity</u>	Debt to <u>Capital</u>	Equity to <u>Capital</u>	Tax Rate (3)	Equity Beta (4)	Unlevered <u>Beta</u>
AEP	AEP	BBB	18807.0	\$35.87	480.0	17219.1	52.2%	47.8%	30.8%	0.699	0.398
Ameren Corp	AEE	BBB-	7738.0	\$28.48	239.7	6826.7	53.1%	46.9%	40.0%	0.764	0.455
Constellation Energy Group	CEG	BBB-	4482.0	\$29.31	202.2	5925.8	43.1%	56.9%	37.7%	0.702	0.477
Duke Energy Corp	DUK	A-	17490.0	\$17.66	1324.0	23379.2	42.8%	57.2%	39.5%	0.596	0.410
Entergy Corp	ETR	BBB	12558.2	\$70.94	181.5	12876.7	49.4%	50.6%	31.9%	0.699	0.420
Southern Co	so	Α	21612.0	\$38.08	838.7	31932.4	40.4%	59.6%	31.7%	0.493	0.337
						Average	46.82%	53.18%	35.27%	0.659	0.416
						Median	46.22%	53.78%	34.80%	0.699	0.415
						Selected	45.00%	55.00%			0.415

	Selected Unlevered Beta	Selected Debt to Capital	Selected Equity to Capital	Tax Rate (7)	Relevered Beta	Risk Free Rate (8)	Market Risk Premium (9)	Size Premium	Credit Spread (10)	Component Cost	Weighted Component Cost
Cost of Equity (5) Cost of Debt (After-Tax) (6)	0.415	45.00%	55.00%	38.9% 38.9%	0.623	4.9% 4.9%	6.67%		2.15%	9.05% 4.31%	4.98% 1.94%

#### Notes:

- (1) Source: Bloomberg.
- (2) 30-day average stock price as of the testing date.
- (3) 12-month trailing effective tax rate per Bloomberg.
- (4) 5 year daily raw Bloomberg equity beta as of the testing date.
- (5) Cost of Equity calculated using the Capital Asset Pricing Model.
- (6) Cost of Debt equal to the risk free rate plus the credit spread tax effected.
- (7) Kentucky effective tax rate.
- (8) 10-Year US Treasury average forward yield curves for the next 10 years.
- (9) Source: Ibbotson SBBI 2010 Valuation Yearbook Long Horizon ERP derived from 1926 2009 data.
- (10) 3 Year average BBB+ utility credit spread as of the testing date.

Attachment to Response to KU AG-1 Question No. 201 Page 1472 of 2028 Charnas

# Crescente, Angela

From:

Wiseman, Sara

Sent:

Wednesday, January 12, 2011 5:09 PM

To:

Raible, Eric

Cc:

Tipton, Karen; Crescente, Angela

Subject:

Regulatory assets

Eric:

We need to tie to the ARO assets number in regulatory assets table for LGE, KU and LKE in the Rates and Regulatory note. I looked in Sharepoint but the table has not been updated yet. Would you be able to give us that number so we can tie? If not, when do you anticipate it will be available?

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886 Attachment to Response to KU AG-1 Question No. 201 Page 1473 of 2028 Charnas

# Crescente, Angela

From:

Wiseman, Sara

Sent:

Wednesday, January 12, 2011 5:12 PM

To:

Wiseman, Sara; Raible, Eric

Cc:

Tipton, Karen; Crescente, Angela

Subject:

**RE: Regulatory assets** 

Eric:

After talking with Angela for a few minutes longer, we are basically stopped on the ARO footnote until we know what the rounding will be on that table.

From: Wiseman, Sara

Sent: Wednesday, January 12, 2011 5:09 PM

To: Raible, Eric

Cc: Tipton, Karen; Crescente, Angela

Subject: Regulatory assets

Eric:

We need to tie to the ARO assets number in regulatory assets table for LGE, KU and LKE in the Rates and Regulatory note. I looked in Sharepoint but the table has not been updated yet. Would you be able to give us that number so we can tie? If not, when do you anticipate it will be available?

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886

Attachment to Response to KU AG-1 Question No. 201 Page 1474 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Wednesday, January 12, 2011 7:07 PM

To:

Subject:

Porter, Janice RE: Project 132543

Janice,

Since we never used oil with PCB's in it, we never set up an ARO for PCB. Although, we will still have to dispose of this material properly as was done in the past, this is considered a rare occurrence that we didn't know existed since it wasn't part of our pipe originally. Therefore, go ahead and use 108901 for the account on your task for removal. This pipe will actually be removed from the ground, not just cut, capped, and purged, right?

Thanks, Angela

From: Porter, Janice

Sent: Wednesday, January 12, 2011 9:43 AM

To: Crescente, Angela

Subject: FW: Project 132543

Angela,

This is per John Skaggs:

PCB's have been detected in the gas pipe that has been removed at Center at least one time years ago (10+). The pipe had to be sent to Arizona/New Mexico to a special landfill or incinerator.

PCB's get inside of the gas pipe from oils used in compressors that have PCB's. We have never used oil w/ PCB's at LG&E that I know of. The most likely way that the PCB's got into the pipe at Center would be from skid mounted compressors that were brought in during the '77 or '78 winter to help remove gas from Center field.

Attachment to Response to KU AG-1 Question No. 201 Page 1475 of 2028 Charnas

# Crescente, Angela

From:

Porter, Janice

Sent:

Thursday, January 13, 2011 8:35 AM

To:

Crescente, Angela

Subject:

RE: Project 132543

Correct.

From: Crescente, Angela

Sent: Wednesday, January 12, 2011 7:07 PM

To: Porter, Janice

Subject: RE: Project 132543

Janice,

Since we never used oil with PCB's in it, we never set up an ARO for PCB. Although, we will still have to dispose of this material properly as was done in the past, this is considered a rare occurrence that we didn't know existed since it wasn't part of our pipe originally. Therefore, go ahead and use 108901 for the account on your task for removal. This pipe will actually be removed from the ground, not just cut, capped, and purged, right?

Thanks, Angela

From: Porter, Janice

Sent: Wednesday, January 12, 2011 9:43 AM

To: Crescente, Angela

Subject: FW: Project 132543

Angela,

This is per John Skaggs:

PCB's have been detected in the gas pipe that has been removed at Center at least one time years ago (10+). The pipe had to be sent to Arizona/New Mexico to a special landfill or incinerator.

PCB's get inside of the gas pipe from oils used in compressors that have PCB's. We have never used oil w/ PCB's at LG&E that I know of. The most likely way that the PCB's got into the pipe at Center would be from skid mounted compressors that were brought in during the '77 or '78 winter to help remove gas from Center field.

Attachment to Response to KU AG-1 Question No. 201 Page 1476 of 2028 Charnas

# Crescente, Angela

From:

Raible, Eric

Sent:

Friday, January 14, 2011 9:57 AM

To:

Crescente, Angela; Freibert, Beth

Cc:

Tipton, Karen; Wiseman, Sara

Subject:

RE: Regulatory assets

Angela – we should have the Regulatory Asset/Liabilities table updated today – hopefully before noon-1pmish.

Beth/Karen – Do we think that will be a problem? I know we were pretty comfortable with the numbers last night, but just let me & Property know.

Thanks,

F: 627-3820

T. Eric Raible, CPA
Manager, Regulatory Accounting & Reporting
Controller Group
LG&E and KU
P: 627-3426

From: Crescente, Angela

Sent: Friday, January 14, 2011 9:43 AM

To: Raible, Eric

**Cc:** Tipton, Karen; Wiseman, Sara **Subject:** RE: Regulatory assets

Eric,

I was just checking on an update for the regulatory asset table. Do have an idea about when it will be ready?

From: Wiseman, Sara

Sent: Wednesday, January 12, 2011 5:12 PM

**To:** Wiseman, Sara; Raible, Eric **Cc:** Tipton, Karen; Crescente, Angela **Subject:** RE: Regulatory assets

Eric:

After talking with Angela for a few minutes longer, we are basically stopped on the ARO footnote until we know what the rounding will be on that table.

From: Wiseman, Sara

Sent: Wednesday, January 12, 2011 5:09 PM

To: Raible, Eric

Attachment to Response to KU AG-1 Question No. 201 Page 1477 of 2028 Charnas

Cc: Tipton, Karen; Crescente, Angela

Subject: Regulatory assets

Eric:

We need to tie to the ARO assets number in regulatory assets table for LGE, KU and LKE in the Rates and Regulatory note. I looked in Sharepoint but the table has not been updated yet. Would you be able to give us that number so we can tie? If not, when do you anticipate it will be available?

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886

#### Attachment to Response to KU AG-1 Question No. 201 Page 1478 of 2028 Charnas

### Crescente, Angela

From:

Crescente, Angela

Sent:

Tuesday, November 08, 2011 1:03 PM

To: Cc: Cloyd, Russ Satkamp, Mark

Subject:

RE: Gas Regulator Facilities and Service Lines

Russ,

I just spoke with Mark and he agreed that I should ask you for verification in regards to the regulator station question I asked below. He said there is cut, cap and purge involvement for the regulator stations that are retired in place. However, the costs per regulator station would probably be considerably smaller than the \$12,432 estimate given for the regulator pits due to the fact that the stations are above ground and the pits are underground. Could you please provide me with an estimate for the cut, cap and purge of the regulator stations each? If you could, please send this to me no later than **Friday, November 11**<sup>th</sup>.

Thanks so much for your help, Angela

From: Crescente, Angela

Sent: Monday, November 07, 2011 11:45 AM

To: Satkamp, Mark; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark and Russ,

One last question, I think. For the regulator stations (since they are above ground), does cut, cap and purge happen to the ones that are retired in place? Or, does cut, cap and purge only happen to things left in the ground like regulator pits?

Thanks, Angela

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 10:16 AM

To: Crescente, Angela; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

All regulator stations are above ground. Through the years, some have been removed and some have been retired in place. We have about 70 regulator stations. We have about 180 regulator pits that are in the ground.

From: Crescente, Angela

**Sent:** Tuesday, October 25, 2011 10:03 AM

To: Satkamp, Mark; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1479 of 2028 Charnas

Russ and Mark,

Based on conversations with Mark, Talso understand that only ones that are underground would apply since all above ground are removed. Is this also correct? If so, how many pits and stations are underground in total?

Thanks, Angela

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 9:55 AM

**To:** Cloyd, Russ **Cc:** Crescente, Angela

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

As I think I understand, the ARO would only possibly apply to a regulator facility that is abandoned in place, due to the legal obligation to cut, cap and purge. If a regulator facility is removed, then there is no ARO due to no legal obligation to cut, cap and purge. I believe this is how this would break down for district regulator facilities:

- For existing regulator <u>assemblies</u> retirements or replacements, the existing facility is always removed, so no ARO exists.
- 2) For existing regulator <u>pits</u> retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place.
- 3) For existing regulator <u>stations</u> retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place.

For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place?

Thanks,

Mark

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 7:29 AM

To: Crescente, Angela

Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela,

We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable.

Attachment to Response to KU AG-1 Question No. 201 Page 1480 of 2028 Charnas

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 10:11 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

So, would it be correct to say we currently have about \$2,237,760.00 in expected dollars to permanently cut, cap, and purge 180 regulator pits at a today's cost of \$12,432.00 each if we were to retire them all now? Do many get added during the year? Would it also be possible to get an estimate for permanent cut, cap and purge of the service lines? I think you said these service lines are actually for commercial use and would have not been included in our numbers given to us by Paul Stratman as part of distribution. Please confirm.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

**Subject:** RE: Gas Regulator Facilities and Service Lines

Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Attachment to Response to KU AG-1 Question No. 201 Page 1481 of 2028 Charnas

Thanks,
Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

To: Crescente, Angela

Cc: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

#### Mark Satkamp

Manager, Gas Control 502-627-3135 Office mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

**Subject:** RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Attachment to Response to KU AG-1 Question No. 201 Page 1482 of 2028 Charnas

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

**Subject:** FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark Cc: Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

Please note, I try to answer as many questions as possible from auditors concerning our estimates and assumptions, however, there is the possibility they will want to discuss your estimates with you directly. Therefore, please retain any support you have for the estimate you give me. Just to let you know, for the Gas Transmission and Distribution Mains,

Attachment to Response to KU AG-1 Question No. 201 Page 1483 of 2028

Charnas we have used a cost per mile estimate, so maybe that will help you come up with your estimate for the pipe at the regulator facilities including the service lines.

I would appreciate if you could provide an estimate to me by October 28<sup>th</sup>.

Please feel free to call me with any questions you may have.

## Attachment to Response to KU AG-1 Question No. 201 Page 1484 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Monday, November 07, 2011 11:45 AM

To:

Satkamp, Mark; Cloyd, Russ

Subject:

RE: Gas Regulator Facilities and Service Lines

Tracking:

Recipient

Read

Satkamp, Mark

Read: 11/7/2011 11:46 AM

Cloyd, Russ

Read: 11/7/2011 1:01 PM

Mark and Russ,

One last question, I think. For the regulator stations (since they are above ground), does cut, cap and purge happen to the ones that are retired in place? Or, does cut, cap and purge only happen to things left in the ground like regulator pits?

Thanks, Angela

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 10:16 AM

To: Crescente, Angela; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

All regulator stations are above ground. Through the years, some have been removed and some have been retired in place. We have about 70 regulator stations. We have about 180 regulator pits that are in the ground.

From: Crescente, Angela

Sent: Tuesday, October 25, 2011 10:03 AM

To: Satkamp, Mark; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Russ and Mark,

Based on conversations with Mark, I also understand that only ones that are underground would apply since all above ground are removed. Is this also correct? If so, how many pits and stations are underground in total?

Thanks, Angela

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 9:55 AM

To: Cloyd, Russ

Cc: Crescente, Angela

Subject: FW: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1485 of 2028 Charnas

Russ,

As I think I understand, the ARO would only possibly apply to a regulator facility that is abandoned in place, due to the legal obligation to cut, cap and purge. If a regulator facility is removed, then there is no ARO due to no legal obligation to cut, cap and purge. I believe this is how this would break down for district regulator facilities:

- 1) For existing regulator <u>assemblies</u> retirements or replacements, the existing facility is always removed, so no ARO exists.
- 2) For existing regulator <u>pits</u> retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place.
- 3) For existing regulator <u>stations</u> retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place.

For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place?

Thanks,

Mark

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 7:29 AM

To: Crescente, Angela Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela,

We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 10:11 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

So, would it be correct to say we currently have about \$2,237,760.00 in expected dollars to permanently cut, cap, and purge 180 regulator pits at a today's cost of \$12,432.00 each if we were to retire them all now? Do many get added

# Attachment to Response to KU AG-1 Question No. 201 Page 1486 of 2028

Charnas

during the year? Would it also be possible to get an estimate for permanent cut, cap and purge of the service lines? I think you said these service lines are actually for commercial use and would have not been included in our numbers given to us by Paul Stratman as part of distribution. Please confirm.

Thanks,
Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

To: Crescente, Angela

Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

**To:** Satkamp, Mark **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Attachment to Response to KU AG-1 Question No. 201 Page 1487 of 2028 Charnas

Russ, Thank you for putting together this cost estimate.

Mark Satkamp Manager, Gas Control 502-627-3135 Office mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

Attachment to Response to KU AG-1 Question No. 201 Page 1488 of 2028 Charnas

**Sent:** Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark Cc: Wiseman, Sara

**Subject:** Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

Please note, I try to answer as many questions as possible from auditors concerning our estimates and assumptions, however, there is the possibility they will want to discuss your estimates with you directly. Therefore, please retain any support you have for the estimate you give me. Just to let you know, for the Gas Transmission and Distribution Mains, we have used a cost per mile estimate, so maybe that will help you come up with your estimate for the pipe at the regulator facilities including the service lines.

I would appreciate if you could provide an estimate to me by October 28th.

Please feel free to call me with any questions you may have.

#### Attachment to Response to KU AG-1 Question No. 201 Page 1489 of 2028 Charnas

## Crescente, Angela

From:
-------

Cloyd, Russ

Sent:

Tuesday, October 25, 2011 2:24 PM

To: Cc: Satkamp, Mark Crescente, Angela

Subject:

RE: Gas Regulator Facilities and Service Lines

Mark,

I believe in general the estimate I compiled would be reasonable for either pits or stations abandoned in place. Let me know if you need more information.

Thanks,

Russ

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 9:55 AM

**To:** Cloyd, Russ **Cc:** Crescente, Angela

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

As I think I understand, the ARO would only possibly apply to a regulator facility that is abandoned in place, due to the legal obligation to cut, cap and purge. If a regulator facility is removed, then there is no ARO due to no legal obligation to cut, cap and purge. I believe this is how this would break down for district regulator facilities:

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For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place?

Thanks,

Mark

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 7:29 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1490 of 2028 Charnas

Α	nge	la

We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable.

<b>-</b>	A I .	 
Mark		
Haliks,		
Thanks,		

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 10:11 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

So, would it be correct to say we currently have about \$2,237,760.00 in expected dollars to permanently cut, cap, and purge 180 regulator pits at a today's cost of \$12,432.00 each if we were to retire them all now? Do many get added during the year? Would it also be possible to get an estimate for permanent cut, cap and purge of the service lines? I think you said these service lines are actually for commercial use and would have not been included in our numbers given to us by Paul Stratman as part of distribution. Please confirm.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark

Attachment to Response to KU AG-1 Question No. 201 Page 1491 of 2028 Charnas

Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

Mark Satkamp
Manager, Gas Control
502-627-3135 Office
mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

Attachment to Response to KU AG-1 Question No. 201 Page 1492 of 2028 Charnas

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

**To:** Satkamp, Mark **Cc:** Wiseman, Sara

**Subject:** Gas Regulator Facilities and Service Lines

Mark,

Attachment to Response to KU AG-1 Question No. 201 Page 1493 of 2028 Charnas

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

Please note, I try to answer as many questions as possible from auditors concerning our estimates and assumptions, however, there is the possibility they will want to discuss your estimates with you directly. Therefore, please retain any support you have for the estimate you give me. Just to let you know, for the Gas Transmission and Distribution Mains, we have used a cost per mile estimate, so maybe that will help you come up with your estimate for the pipe at the regulator facilities including the service lines.

I would appreciate if you could provide an estimate to me by October 28th.

Please feel free to call me with any questions you may have.

## Attachment to Response to KU AG-1 Question No. 201 Page 1494 of 2028 Charnas

## Crescente, Angela

From:

Satkamp, Mark

Sent:

Tuesday, October 25, 2011 11:39 AM

To:

Crescente, Angela; Cloyd, Russ

Subject:

RE: Gas Regulator Facilities and Service Lines

Just to provide some additional clarification: Typically when pits or stations are retired we try to remove them. However, there have been some cases where pits (the one at the Louisville Skate Park, and the Dixie & Flintlock Pit in the middle of Bob Montgomery Chevrolet's parking lot) have been abandoned in place due to customer or other logistical issues. There have also been a few cases where stations (such as the 19<sup>th</sup> & Broadway facility) have been abandoned in place, but typically the stations are removed.

Russ, if you can help answer my previous questions below, I think this will clear up this issue:

"For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place?"

Also, for the original question pertaining to whether or not any AROs exist associated with the District Regulator Upgrade and Regulator Capacity Upgrade projects – most of the time, the answer will be no as these facilities are usually removed rather than abandoned in place. For the HP commercial services project, most of the time, the answer will be no, because the service lines are typically not retired. For the few cases where these facilities are abandoned in place for these projects, this is probably not material because this seldom happens.

Thanks,

Mark

From: Crescente, Angela

Sent: Tuesday, October 25, 2011 11:06 AM

To: Satkamp, Mark; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Thanks Mark. We were also discussing the fact that it may not even be the \$12,432.00 each to cut, cap, purge and abandon because this cost may have originally assumed that it was including retirement costs for removing instead of abandoning in place. Am I understanding that correctly? In other words, now that we have a better idea of what the legal requirement is (regulator pits abandoned in place) how much would the cut, cap and purge for each pit if we were to abandon, not remove?

From: Satkamp, Mark

**Sent:** Tuesday, October 25, 2011 10:16 AM

To: Crescente, Angela; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

All regulator stations are above ground. Through the years, some have been removed and some have been retired in place. We have about 70 regulator stations. We have about 180 regulator pits that are in the ground.

Attachment to Response to KU AG-1 Question No. 201 Page 1495 of 2028 Charnas

From: Crescente, Angela

Sent: Tuesday, October 25, 2011 10:03 AM

To: Satkamp, Mark; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Russ and Mark,

Based on conversations with Mark, I also understand that only ones that are underground would apply since all above ground are removed. Is this also correct? If so, how many pits and stations are underground in total?

Thanks, Angela

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 9:55 AM

**To:** Cloyd, Russ **Cc:** Crescente, Angela

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

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For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place?

Thanks,

Mark

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 7:29 AM

To: Crescente, Angela

Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1496 of 2028 Charnas

Angela,

We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 10:11 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

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Thanks, Angela

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Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

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Russ, Let me know if I have mis-stated anything.

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From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

**Subject:** RE: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1497 of 2028 Charnas

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

Mark Satkamp
Manager, Gas Control
502-627-3135 Office
mark.satkamp@lge-ku.com

From: Cloyd, Russ

**Sent:** Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

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Russ

From: Satkamp, Mark

**Sent:** Friday, October 14, 2011 3:38 PM

Attachment to Response to KU AG-1 Question No. 201 Page 1498 of 2028 Charnas

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

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Sent: Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

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Thanks,

Mark

From: Crescente, Angela

**Sent:** Friday, October 14, 2011 2:25 PM

**To:** Satkamp, Mark **Cc:** Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

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Attachment to Response to KU AG-1 Question No. 201 Page 1499 of 2028

Charnas

very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

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I would appreciate if you could provide an estimate to me by October 28<sup>th</sup>.

Please feel free to call me with any questions you may have.

### Attachment to Response to KU AG-1 Question No. 201 Page 1500 of 2028 Charnas

## Crescente, Angela

From:

Satkamp, Mark

Sent: To: Tuesday, October 25, 2011\_10:16 AM

Subject:

Crescente, Angela; Cloyd, Russ RE: Gas Regulator Facilities and Service Lines

All regulator stations are above ground. Through the years, some have been removed and some have been retired in place. We have about 70 regulator stations. We have about 180 regulator pits that are in the ground.

From: Crescente, Angela

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To: Satkamp, Mark; Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Russ and Mark,

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Thanks, Angela

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 9:55 AM

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Subject: FW: Gas Regulator Facilities and Service Lines

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For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place?

Thanks,

Mark

Attachment to Response to KU AG-1 Question No. 201 Page 1501 of 2028 Charnas

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 7:29 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela,

We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable.

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To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

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Thanks, Angela

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Cc: Cloyd, Russ

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Russ, Let me know if I have mis-stated anything.

Attachment to Response to KU AG-1 Question No. 201 Page 1502 of 2028 Charnas

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark and Russ:

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Sent: Wednesday, October 19, 2011 6:21 AM

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Subject: FW: Gas Regulator Facilities and Service Lines

#### Angela,

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Russ, Thank you for putting together this cost estimate.

#### Mark Satkamp

Manager, Gas Control 502-627-3135 Office mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

## Attachment to Response to KU AG-1 Question No. 201 Page 1503 of 2028

Charnas
I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send

you the spreadsheet showing the estimate I used if you helps.	like. Let me know if you need more information. I hope this
Russ	
From: Satkamp, Mark Sent: Friday, October 14, 2011 3:38 PM To: Cloyd, Russ Subject: RE: Gas Regulator Facilities and Service Lines	
Yes. Thank you.	
From: Cloyd, Russ Sent: Friday, October 14, 2011 3:35 PM To: Satkamp, Mark Subject: RE: Gas Regulator Facilities and Service Lines	
Mark,	
I don't have an estimate but would be happy to calculat sufficient?	e one. If I come up with an estimate by Monday would that be
Thanks,	
Russ	
From: Satkamp, Mark Sent: Friday, October 14, 2011 3:31 PM To: Cloyd, Russ Subject: FW: Gas Regulator Facilities and Service Lines	
Russ,	
Do you have an estimate of the cost to permanently cut	ercial services project) in place ? I would forward this estimate to
Thanks,	
Mark	

From: Crescente, Angela Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark

Attachment to Response to KU AG-1 Question No. 201 Page 1504 of 2028 Charnas

Cc: Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

Please note, I try to answer as many questions as possible from auditors concerning our estimates and assumptions, however, there is the possibility they will want to discuss your estimates with you directly. Therefore, please retain any support you have for the estimate you give me. Just to let you know, for the Gas Transmission and Distribution Mains, we have used a cost per mile estimate, so maybe that will help you come up with your estimate for the pipe at the regulator facilities including the service lines.

I would appreciate if you could provide an estimate to me by October 28th.

Please feel free to call me with any questions you may have.

#### Attachment to Response to KU AG-1 Question No. 201 Page 1505 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Tuesday, October 25, 2011 10:03 AM

To:

Satkamp, Mark; Cloyd, Russ

Subject:

RE: Gas Regulator Facilities and Service Lines

Russ and Mark,

Based on conversations with Mark, I also understand that only ones that are underground would apply since all above ground are removed. Is this also correct? If so, how many pits and stations are underground in total?

Thanks, Angela

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 9:55 AM

To: Cloyd, Russ

Cc: Crescente, Angela

**Subject:** FW: Gas Regulator Facilities and Service Lines

Russ,

As I think I understand, the ARO would only possibly apply to a regulator facility that is abandoned in place, due to the legal obligation to cut, cap and purge. If a regulator facility is removed, then there is no ARO due to no legal obligation to cut, cap and purge. I believe this is how this would break down for district regulator facilities:

- For existing regulator <u>assemblies</u> retirements or replacements, the existing facility is always removed, so no ARO exists.
- For existing regulator <u>pits</u> retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place.
- 3) For existing regulator <u>stations</u> retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place.

For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place?

Thanks,

Mark

From: Satkamp, Mark

Sent: Tuesday, October 25, 2011 7:29 AM

To: Crescente, Angela

Cc: Cloyd, Russ

**Subject:** RE: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1506 of 2028 Charnas

Angela
--------

We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable.

Thanks,	
Mark	
From: Crescente, Angela Sent: Wednesday, October 19, 2011 10:11 AM	

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

So, would it be correct to say we currently have about \$2,237,760.00 in expected dollars to permanently cut, cap, and purge 180 regulator pits at a today's cost of \$12,432.00 each if we were to retire them all now? Do many get added during the year? Would it also be possible to get an estimate for permanent cut, cap and purge of the service lines? I think you said these service lines are actually for commercial use and would have not been included in our numbers given to us by Paul Stratman as part of distribution. Please confirm.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1507 of 2028 Charnas

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

To: Crescente, Angela

Cc: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

## Mark Satkamp

Manager, Gas Control 502-627-3135 Office mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

From: Satkamp, Mark

Attachment to Response to KU AG-1 Question No. 201 Page 1508 of 2028 Charnas

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

**Sent:** Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark Cc: Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me

Attachment to Response to KU AG-1 Question No. 201 Page 1509 of 2028

Charnas

surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

Please note, I try to answer as many questions as possible from auditors concerning our estimates and assumptions, however, there is the possibility they will want to discuss your estimates with you directly. Therefore, please retain any support you have for the estimate you give me. Just to let you know, for the Gas Transmission and Distribution Mains, we have used a cost per mile estimate, so maybe that will help you come up with your estimate for the pipe at the regulator facilities including the service lines.

I would appreciate if you could provide an estimate to me by October 28th.

Please feel free to call me with any questions you may have.

### Attachment to Response to KU AG-1 Question No. 201 Page 1510 of 2028 Charnas

## Crescente, Angela

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 10:11 AM

From: Satkamp, Mark Sent: Tuesday, October 25, 2011 9:55 AM To: Cloyd, Russ Crescente, Angela Cc: Subject: FW: Gas Regulator Facilities and Service Lines Russ, As I think I understand, the ARO would only possibly apply to a regulator facility that is abandoned in place, due to the legal obligation to cut, cap and purge. If a regulator facility is removed, then there is no ARO due to no legal obligation to cut, cap and purge. I believe this is how this would break down for district regulator facilities: 1) For existing regulator <u>assemblies</u> retirements or replacements, the existing facility is always removed, so no ARO exists. 2) For existing regulator pits retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place. 3) For existing regulator stations retirements or replacements, the existing facility is sometimes removed, and sometimes abandoned in place. For the cost estimate that you provided previously, would this be applicable to pits that were abandoned in place? Would this also be a reasonable estimate for stations that were abandoned in place? Thanks, Mark From: Satkamp, Mark Sent: Tuesday, October 25, 2011 7:29 AM To: Crescente, Angela Cc: Cloyd, Russ Subject: RE: Gas Regulator Facilities and Service Lines Angela, We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable. Thanks, Mark

1

Attachment to Response to KU AG-1 Question No. 201 Page 1511 of 2028 Charnas

**To:** Satkamp, Mark **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

So, would it be correct to say we currently have about \$2,237,760.00 in expected dollars to permanently cut, cap, and purge 180 regulator pits at a today's cost of \$12,432.00 each if we were to retire them all now? Do many get added during the year? Would it also be possible to get an estimate for permanent cut, cap and purge of the service lines? I think you said these service lines are actually for commercial use and would have not been included in our numbers given to us by Paul Stratman as part of distribution. Please confirm.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

Attachment to Response to KU AG-1 Question No. 201 Page 1512 of 2028 Charnas

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

Mark Satkamp
Manager, Gas Control
502-627-3135 Office
mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

## Attachment to Response to KU AG-1 Question No. 201 Page 1513 of 2028

Charnas
I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

**Sent:** Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark Cc: Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

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I would appreciate if you could provide an estimate to me by October 28<sup>th</sup>.

Please feel free to call me with any questions you may have.

Attachment to Response to KU AG-1 Question No. 201 Page 1514 of 2028 Charnas

### Attachment to Response to KU AG-1 Question No. 201 Page 1515 of 2028 Charnas

## Crescente, Angela

From:

Satkamp, Mark

Sent:

Tuesday, October 25, 2011 7:29 AM

To:

Crescente, Angela

Cc: Subject: Cloyd, Russ RE: Gas Regulator Facilities and Service Lines

Angela,

We typically will retire only a handful (approx. half a dozen or less), of district regulator facilities each year. Regarding the service lines – we have an annual project to re-work existing HP commercial and industrial customer services. However, the work scope of this project typically involves the conversion of existing customer services from high pressure to medium pressure. As such, the retirement of service lines for this project typically is not applicable.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 10:11 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

So, would it be correct to say we currently have about \$2,237,760.00 in expected dollars to permanently cut, cap, and purge 180 regulator pits at a today's cost of \$12,432.00 each if we were to retire them all now? Do many get added during the year? Would it also be possible to get an estimate for permanent cut, cap and purge of the service lines? I think you said these service lines are actually for commercial use and would have not been included in our numbers given to us by Paul Stratman as part of distribution. Please confirm.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks.

Attachment to Response to KU AG-1 Question No. 201 Page 1516 of 2028 Charnas

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

#### Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

#### Mark Satkamp

Manager, Gas Control 502-627-3135 Office mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send

## Attachment to Response to KU AG-1 Question No. 201 Page 1517 of 2028

you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark Cc: Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1518 of 2028 Charnas

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

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I would appreciate if you could provide an estimate to me by October 28th.

Please feel free to call me with any questions you may have.

## Attachment to Response to KU AG-1 Question No. 201 Page 1519 of 2028 Charnas

## Crescente, Angela

From:

Cloyd, Russ

Sent: To: Wednesday, October 19, 2011 1:22 PM Satkamp, Mark; Crescente, Angela

Subject:

RE: Gas Regulator Facilities and Service Lines

Mark, I agree with you comments.

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

Attachment to Response to KU AG-1 Question No. 201 Page 1520 of 2028 Charnas

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

Mark Satkamp
Manager, Gas Control
502-627-3135 Office
mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Attachment to Response to KU AG-1 Question No. 201 Page 1521 of 2028 Charnas

Russ

From: Satkamp, Mark

**Sent:** Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

**To:** Satkamp, Mark **Cc:** Wiseman, Sara

**Subject:** Gas Regulator Facilities and Service Lines

Mark.

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

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I would appreciate if you could provide an estimate to me by October 28<sup>th</sup>.

Please feel free to call me with any questions you may have.

Thanks, Angela

## Attachment to Response to KU AG-1 Question No. 201 Page 1522 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Wednesday, October 19, 2011 10:11 AM

To: Cc: Satkamp, Mark Cloyd, Russ

Subject:

RE: Gas Regulator Facilities and Service Lines

Tracking:

Recipient

Read

Satkamp, Mark Cloyd, Russ Read: 10/19/2011 10:29 AM

Read: 10/19/2011 10:33 AM

Mark,

So, would it be correct to say we currently have about \$2,237,760.00 in expected dollars to permanently cut, cap, and purge 180 regulator pits at a today's cost of \$12,432.00 each if we were to retire them all now? Do many get added during the year? Would it also be possible to get an estimate for permanent cut, cap and purge of the service lines? I think you said these service lines are actually for commercial use and would have not been included in our numbers given to us by Paul Stratman as part of distribution. Please confirm.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 9:40 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

To: Satkamp, Mark Cc: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total

# Attachment to Response to KU AG-1 Question No. 201 Page 1523 of 2028

Charnas liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

**To:** Crescente, Angela **Cc:** Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

Mark Satkamp
Manager, Gas Control
502-627-3135 Office
mark.satkamp@lge-ku.com

From: Cloyd, Russ

**Sent:** Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

Attachment to Response to KU AG-1 Question No. 201 Page 1524 of 2028 Charnas

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

**Subject:** FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

**To:** Satkamp, Mark **Cc:** Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

Please note, I try to answer as many questions as possible from auditors concerning our estimates and assumptions, however, there is the possibility they will want to discuss your estimates with you directly. Therefore, please retain any

Attachment to Response to KU AG-1 Question No. 201 Page 1525 of 2028

Charnas support you have for the estimate you give me. Just to let you know, for the Gas Transmission and Distribution Mains, we have used a cost per mile estimate, so maybe that will help you come up with your estimate for the pipe at the regulator facilities including the service lines.

I would appreciate if you could provide an estimate to me by October 28<sup>th</sup>.

Please feel free to call me with any questions you may have.

Thanks, Angela Attachment to Response to KU AG-1 Question No. 201 Page 1526 of 2028 Charnas

## Crescente, Angela

From:

Satkamp, Mark

Sent:

Wednesday, October 19, 2011 9:40 AM

To:

Crescente, Angela

Cc:

Cloyd, Russ

Subject:

RE: Gas Regulator Facilities and Service Lines

Angela, We have about 180 regulator pit facilities. Typically, only a handful or less of these are retired each year. This estimate would not apply to a service line, which would have less cost associated with retirement.

Russ, Let me know if I have mis-stated anything.

Thanks,

Mark

From: Crescente, Angela

Sent: Wednesday, October 19, 2011 9:34 AM

**To:** Satkamp, Mark **Cc:** Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

#### Mark and Russ:

Thanks for the information. How much would it cost if we were to abandon all that we have of what you are referring to below? In other words, I am not aware of how many regulator pit facilities we have so that I could calculate the total liability. Does this estimate also include the service lines we spoke about before? I apologize if I am misunderstanding anything.

Thanks, Angela

From: Satkamp, Mark

Sent: Wednesday, October 19, 2011 6:21 AM

To: Crescente, Angela

Cc: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

#### Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

Mark Satkamp

Manager, Gas Control

## Attachment to Response to KU AG-1 Question No. 201 Page 1527 of 2028 Charnas

502-627-3135 Office mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

Attachment to Response to KU AG-1 Question No. 201 Page 1528 of 2028 Charnas

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark Cc: Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

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I would appreciate if you could provide an estimate to me by October 28th.

Please feel free to call me with any questions you may have.

Thanks, Angela

## Attachment to Response to KU AG-1 Question No. 201 Page 1529 of 2028 Charnas

# Crescente, Angela

From:

Satkamp, Mark

Sent:

Wednesday, October 19, 2011 6:21 AM

To:

Crescente, Angela

Cc:

Cloyd, Russ

Subject:

FW: Gas Regulator Facilities and Service Lines

Angela,

The cost estimate to cut, cap and purge a regulator pit facility with four inch inlet piping and six inch outlet piping is \$12,432. Please use this figure to assess the materiality of this portion of these projects.

Russ, Thank you for putting together this cost estimate.

#### Mark Satkamp

Manager, Gas Control 502-627-3135 Office mark.satkamp@lge-ku.com

From: Cloyd, Russ

Sent: Tuesday, October 18, 2011 10:31 PM

To: Satkamp, Mark

Subject: RE: Gas Regulator Facilities and Service Lines

Mark,

I have not forgotten about this. I came up with \$12,432 for a typical estimate to cut, cap and purge a regulator facility with four inch inlet piping and six inch outlet. This would be somewhat typical of a regulator pit retirement. I can send you the spreadsheet showing the estimate I used if you like. Let me know if you need more information. I hope this helps.

Russ

From: Satkamp, Mark

**Sent:** Friday, October 14, 2011 3:38 PM

To: Cloyd, Russ

Subject: RE: Gas Regulator Facilities and Service Lines

Yes. Thank you.

From: Cloyd, Russ

Sent: Friday, October 14, 2011 3:35 PM

To: Satkamp, Mark

**Subject:** RE: Gas Regulator Facilities and Service Lines

Attachment to Response to KU AG-1 Question No. 201 Page 1530 of 2028 Charnas

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I don't have an estimate but would be happy to calculate one. If I come up with an estimate by Monday would that be sufficient?

Thanks,

Russ

From: Satkamp, Mark

Sent: Friday, October 14, 2011 3:31 PM

To: Cloyd, Russ

Subject: FW: Gas Regulator Facilities and Service Lines

Russ,

We had a discussion previously regarding whether or not regulator facility retirements should be considered as AROs. Do you have an estimate of the cost to permanently cut, cap and purge (abandon) a regulator facility (typically associated with the regulator capacity and/or HP commercial services project) in place ? I would forward this estimate to Angela which would help Property Accounting to assess the materiality of this portion of these projects.

Thanks,

Mark

From: Crescente, Angela

Sent: Friday, October 14, 2011 2:25 PM

To: Satkamp, Mark Cc: Wiseman, Sara

Subject: Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

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Attachment to Response to KU AG-1 Question No. 201 Page 1531 of 2028 Charnas

I would appreciate if you could provide an estimate to me by October 28<sup>th</sup>.

Please feel free to call me with any questions you may have.

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1532 of 2028 Charnas

# Crescente, Angela

From:

Porter, Janice

Sent:

Tuesday, October 18, 2011 9:27 AM

To:

Crescente, Angela

Cc:

Harper, Bill; Harshfield, Eddie

Subject:

FW: Gas Personnel

Angela,

Please add Bill Harper.

Thanks, Janice

From: Porter, Janice

Sent: Tuesday, October 18, 2011 8:31 AM

To: Crescente, Angela Cc: Harshfield, Eddie

Subject: RE: Gas Personnel

Pete Clyde Tom Reith Mark Satkamp John Skaggs Glenn Sundheimer Eddie Harshfield

From: Crescente, Angela

Sent: Friday, October 14, 2011 4:19 PM To: Porter, Janice; Wright, Sharon Cc: Allen, Lisa; Wiseman, Sara Subject: Gas Personnel

Janice/Sharon:

We are planning on doing a training session with gas folks in regards to AROs in November. Could you please provide me with a distribution list of those who should be invited to ensure that we try to capture everyone? If you could please send it to me as soon as you can that would be great so I can be looking at availability.

Thanks for your help, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1533 of 2028 Charnas

# Crescente, Angela

From:

Porter, Janice

Sent:

Tuesday, October 18, 2011 8:31 AM

To: Cc: Crescente, Angela Harshfield, Eddie

Subject:

RE: Gas Personnel

Pete Clyde Tom Reith Mark Satkamp John Skaggs Glenn Sundheimer Eddie Harshfield

From: Crescente, Angela

**Sent:** Friday, October 14, 2011 4:19 PM **To:** Porter, Janice; Wright, Sharon **Cc:** Allen, Lisa; Wiseman, Sara

Subject: Gas Personnel

#### Janice/Sharon:

We are planning on doing a training session with gas folks in regards to AROs in November. Could you please provide me with a distribution list of those who should be invited to ensure that we try to capture everyone? If you could please send it to me as soon as you can that would be great so I can be looking at availability.

Thanks for your help, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1534 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent: To: Friday, October 14, 2011 4:19 PM Porter, Janice; Wright, Sharon

Cc:

Allen, Lisa; Wiseman, Sara

Subject:

Gas Personnel

## Janice/Sharon:

We are planning on doing a training session with gas folks in regards to AROs in November. Could you please provide me with a distribution list of those who should be invited to ensure that we try to capture everyone? If you could please send it to me as soon as you can that would be great so I can be looking at availability.

Thanks for your help, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1535 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Friday, October 14, 2011 2:25 PM

To: Cc: Satkamp, Mark Wiseman, Sara

Subject:

Gas Regulator Facilities and Service Lines

Mark,

In regards to the questions you had for the above referenced items, is there any way you could send me an estimate as to how much you think it would cost to permanently cut, cap and purge (abandon) them in place if we were to do that today? Please correct me if I am misstating something, but if I remember correctly, the concerns you mentioned to me surrounded the abandonment of such pipe. I also remember discussing the possibility that the materiality of it would be very low. I thought it would be best if I could provide an estimate of these items to senior management in an effort to aid them in making the ultimate materiality decision. If there are any other concerns that have forgotten that we discussed would create the need to discuss AROs, please feel free to remind me so we talk more.

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I would appreciate if you could provide an estimate to me by October 28th.

Please feel free to call me with any questions you may have.

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1536 of 2028 Charnas

## Clark, Ed

From:

Jim Ogilvie <jogilvie@pwrplan.com>

Sent:

Tuesday, March 29, 2011 11:40 AM

To:

Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc:

Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

**RE: ARO Settlements** 

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

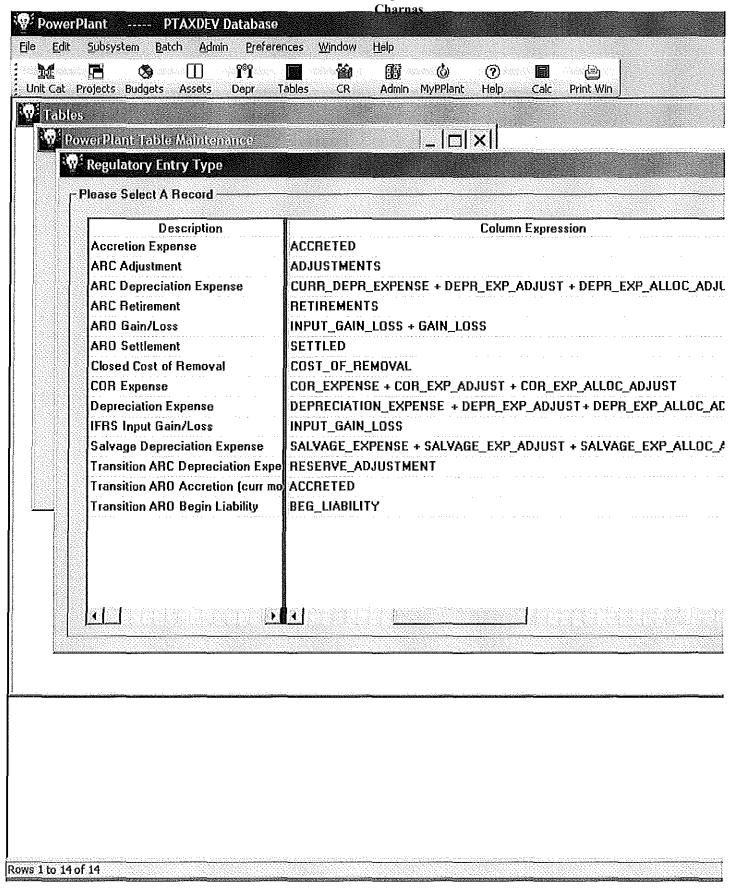
Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.

Attachment to Response to KU AG-1 Question No. 201 Page 1537 of 2028



Thanks, Angela

#### Attachment to Response to KU AG-1 Question No. 201 Page 1538 of 2028 Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

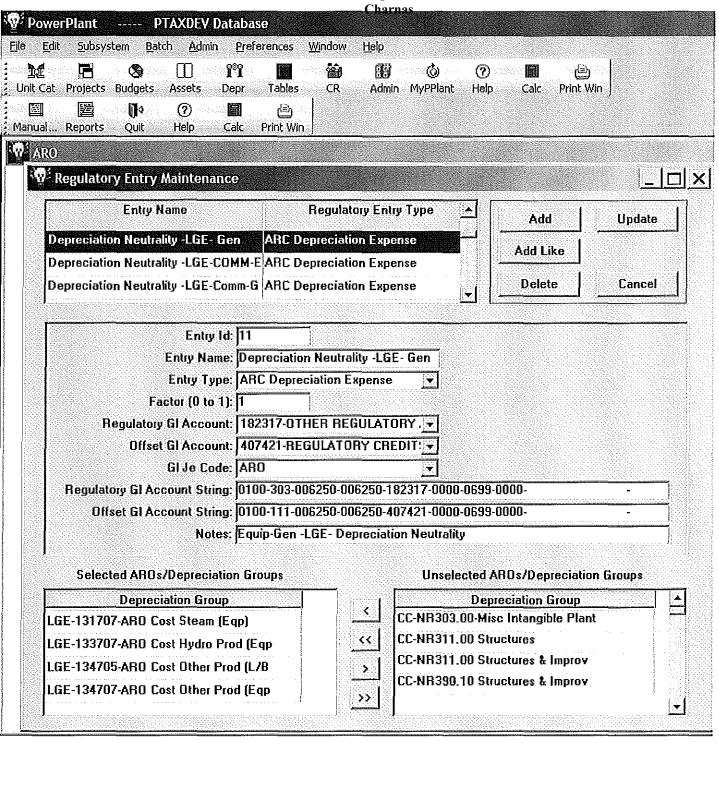
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

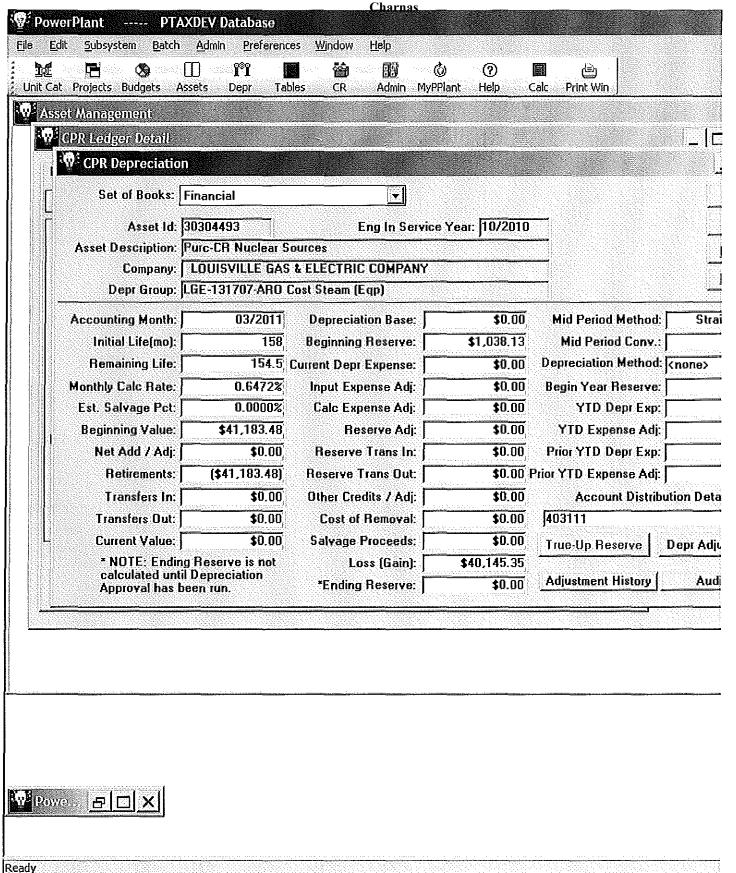
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1539 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1540 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1541 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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The New Address is:

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

**Subject:** ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1542 of 2028 Charnas

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1543 of 2028

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Und				Long De	scription:	Purc-C	R Nucli

Attachment to Response to KU AG-1 Question No. 201 Page 1544 of 2028 Charnas

NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any

storage medium.

Attachment to Response to KU AG-1 Question No. 201 Page 1545 of 2028 Charnas

## Clark, Ed

From:

Jim Ogilvie <jogilvie@pwrplan.com>

Sent:

Tuesday, March 29, 2011 11:00 AM

To: Cc: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
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Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

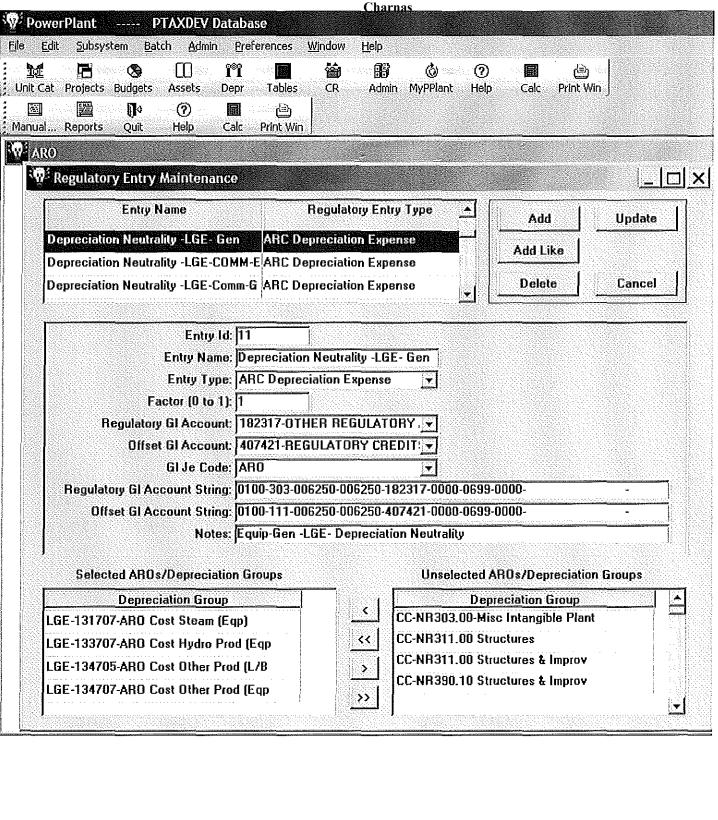
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

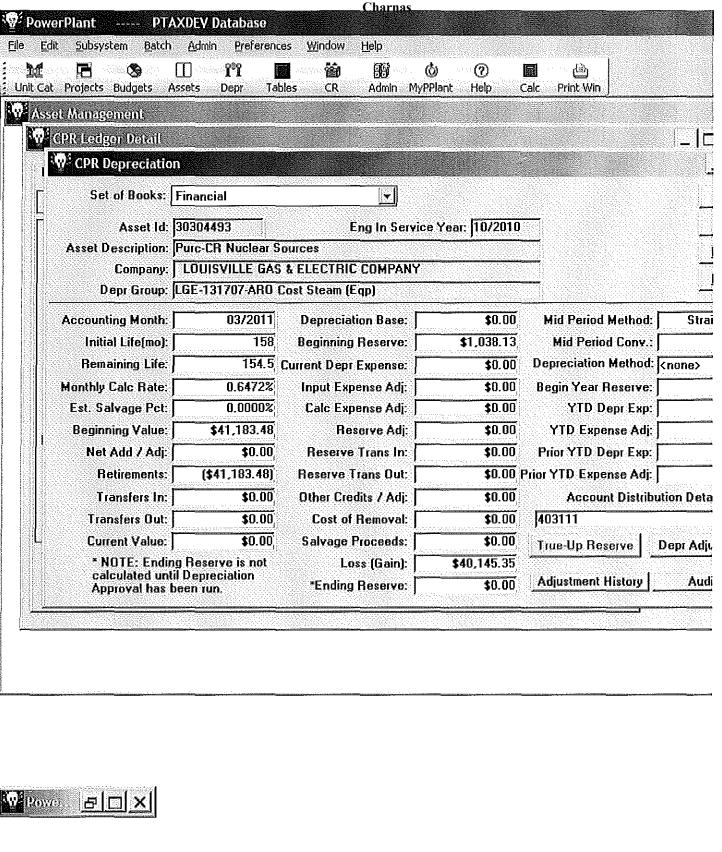
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1546 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1547 of 2028



Ready

Attachment to Response to KU AG-1 Question No. 201 Page 1548 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1549 of 2028 Charnas

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1550 of 2028 Charnas

PowerPlant **PTAXDEV Database** File Edit <u>Subsystem</u> Batch Admin Preferences Window Help r 曾 **(**0) ... (?) 丽 他 M F **(%)** Unit Cat Projects Budgets MyPPlant Help. Calc Print Win Assets Depr Tables CR Admin ARO Details ARO Details ARO Asset Det 30304493 Asset Id: Description: Purc-CR Nuclear Sources Description: Purc-CR Nuclear LOUISVILLE GAS & ELECTRIC COMPANY Company: -Business Segmer Electric Site ▼ ARC Auto Ret; no ARO Type: • Asset Gl Account: 101 - Plant In Sei Inactive Rate Type: Standard -ARO Status: E317.07-ARO Cos Utility Account: Status Date: 3/28/2011 Use Det. Rates: no • Sub Account: None 230012-ASSET RETIREMENT OE ▼ Liability Account: Retirement Unit: ARO - CHILD 411150-ACCRETION EXPENSE -Accretion Acct: EON Default Prop 421105-GAIN ON ARO SETTLEN 🕶 **Book Summary:** Property Group: Gain Account: Land and AROs -Loss Account: 421105-GAIN ON ARO SETTLEN 🛨 ARO Asset Location: • Long Description: Purc-CR Nuclear Sources Subledger Type: ARO End of Life: 12/2023 Settle Cost Elmnt: 0699: CORPORATE DEFAULT 1000 Asset Dollars: \$0.00 ARO Rollup: Gen-Equip ▼ Long Description: Purc-CR Nuclear **Ext ARO Code Underlying Related Locations** Related Asset Locations Ready

Attachment to Response to KU AG-1 Question No. 201 Page 1551 of 2028 Charnas

NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium.

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Attachment to Response to KU AG-1 Question No. 201 Page 1552 of 2028 Charnas

## Clark, Ed

From:

Jim Ogilvie <jogilvie@pwrplan.com>

Sent:

Tuesday, March 29, 2011 10:34 AM

To:

Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc:

Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1553 of 2028 Charnas

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201
Page 1554 of 2028
Charnas

ARO Details		CR Admin	MyPPlant Help	Calc Print Win
				100 4 15
	ARO Details		Asset Id:	ARO Asset Do
	urc-CR Nuclear Sources	- 4 513.5	Asset Iu;     Description:	Service Court (
	LOUISVILLE GAS & ELECTRIC COM ite ARC Auto Ret:			gmer Electric
	active Rate Type:	Standard 💌		count: 101 - Plant in S
	/28/2011 Use Det. Rates:	The state of the s		
-	30012-ASSET RETIREMENT OE		Sub Accoun	
	11150-ACCRETION EXPENSE -		Retirement	Unit: ARO - CHILD
Gain Account: 4	21105-GAIN ON ARO SETTLEN	Book Summary	: Property Gr	oup: EON Default Pr
Loss Account: 4	21105-GAIN ON ARO SETTLEN	ARO 💌	Asset Locat	ion: Land and ARO
Long Description:	urc-CR Nuclear Sources		Subledger T	ype: ARO
。 8 - 3 - 4 - 4 - 4 - 1 - 1 - 1 - 1 - 1 - 1 - 1		(C) (C) (C)	End of Life:	12/2023
	699: CORPORATE DEFAULT	<u> </u>	Asset Dollar	s: \$0.00
Ext ARO Code	en-Equip	and the second s	Long Descri	ption: Purc-CR Nucles

Attachment to Response to KU AG-1 Question No. 201 Page 1555 of 2028 Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1556 of 2028 Charnas

## Clark, Ed

From:

Leenerts, Patricia

Sent:

Monday, March 28, 2011 5:24 PM

To:

Crescente, Angela

Subject:

ARO retires - ASBESTOS only or also DISTRIBUTION MAINS

I just remembered to check...alas I did not push the button.

Angela, Diana reminded me that we may only be working toward settling only Asbestos AROs for March. Do you know if I need to continue working on the LSMR project? Diana thought that you might not be to the place you were hoping for processing main AROs. If mains aren't processing this month I want to stop working on the LSMR. I could certainly use the time for other projects.

Thanks,

Pat

502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1557 of 2028 Charnas

## Clark, Ed

From:

Leenerts, Patricia

Sent:

Monday, March 28, 2011 9:48 AM

To: Subject: Crescente, Angela Transfer ARO assets

Angela, I need to transfer plant accounts for 2 assets from 2352.50 to 2352.55. Do you care? Do I need to let you know, on a normal basis when I do this type of transfer? In this case these are for wells which we will not be working on until after March close, so there won't be confusion with these assets and the other AROs which we should be retiring in March.

Thanks,

Pat

502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1558 of 2028 Charnas

## Clark, Ed

From:

Leenerts, Patricia

Sent:

Wednesday, March 23, 2011 10:11 AM

To:

Crescente, Angela

Subject:

RE: ARO - update...what is the plan?

Yep, I'm also working on getting some of my big projects in, so I am making plans. I will have the LSMR retirements ready for you. I am also working on PMR. Cut-off is March 30.

Thanks,

Pat

502-627-3811

From: Crescente, Angela

Sent: Wednesday, March 23, 2011 10:09 AM

To: Leenerts, Patricia

Subject: RE: ARO - update...what is the plan?

Working on it....are you going to be here next week?

From: Leenerts, Patricia

Sent: Wednesday, March 23, 2011 10:02 AM

To: Crescente, Angela

Subject: ARO - update...what is the plan?

Attachment to Response to KU AG-1 Question No. 201 Page 1559 of 2028 Charnas

## Clark, Ed

From:

Fackler, Andrea

Sent:

Tuesday, March 22, 2011 1:47 PM

To:

Crescente, Angela

Cc: Subject: Pienaar, Lesley; Wiseman, Sara RE: Note 4 - ARO - Information Draft

#### Angela,

PPL does not disclose those amounts outside of the rollforward table of the balance sheet type accounts. As such, Lesley said we should be okay to remove the amounts from the paragraph and leave it as a general discussion of our accounting process. Here is an updated version of LKE's paragraph with the amounts removed for you to review.

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied; therefore, ARO net assets, ARO liabilities and regulatory asset balances do not net to zero.

I've removed the sentence in question in KU's document only, which is what you requested. You should be able to see all the updates on Sharepoint now. Let me know if you have any questions.

Thanks, Andrea

Andrea Fackler, CPA
Accounting Analyst II
LG&E and KU Energy, LLC
220 W. Main Street, 9th Floor
Louisville, KY 40202
P. (502) 627–3442

From: Crescente, Angela

Sent: Tuesday, March 22, 2011 11:37 AM

To: Fackler, Andrea

Cc: Pienaar, Lesley; Wiseman, Sara

**Subject:** RE: Note 4 - ARO - Information Draft

#### Andrea:

Per our conversation, I will wait to hear from you as to whether or not the first point needs to be included for sure. As for point number 2, that sentenced needs to be deleted because there is not enough cash value to not make them zero. However, there is for LG&E and LKE so that is why the sentence needs to stay for them. Please keep that sentence deleted on KU since they do net to zero (in millions). For point number 3, I think the changes you made hinge on whether or not we do point 1.

Attachment to Response to KU AG-1 Question No. 201 Page 1560 of 2028 Charnas

From: Fackler, Andrea

Sent: Tuesday, March 22, 2011 11:13 AM

To: Crescente, Angela

Cc: Pienaar, Lesley; Wiseman, Sara

Subject: RE: Note 4 - ARO - Information Draft

Angela,

I am working on the updates you submitted for the ARO footnotes and have a few follow up items/questions.

- 1) We need to include the amount of ARO depr. and amort. for the 3 months ended 3/31/10 for all three companies. Can you provide me with this amount? No need to cut and paste into a new document as long as you maintain the support in your final tie-out.
- 2) In the KU file you sent, you deleted the last sentence of the paragraph directly below the table. You did not delete it from the LG&E or LKE files. Please confirm what you would like here.
- 3) I made some other updates to formatting and wording to help clean up some of the language surrounding all the amounts we had to report at yearend for predecessor and successor and also included some additional language from the yearend report, so please review the updated copies of the footnotes on Sharepoint and let me know if you have any questions.

Thanks, Andrea

From: Pienaar, Lesley

Sent: Tuesday, March 22, 2011 9:39 AM

To: Fackler, Andrea

Subject: FW: Note 4 - ARO - Information Draft

From: Crescente, Angela

Sent: Friday, March 18, 2011 5:08 PM

To: Pienaar, Lesley Cc: Wiseman, Sara

Subject: Note 4 - ARO - Information Draft

Lesley,

Here are my changes:

<< File: Note 4 - ARO - LKE Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >>

Attachment to Response to KU AG-1 Question No. 201 Page 1561 of 2028 Charnas

#### Clark, Ed

From:

Crescente, Angela

Sent:

Tuesday, March 22, 2011 11:37 AM

To:

Fackler, Andrea

Cc: Subject: Pienaar, Lesley; Wiseman, Sara RE: Note 4 - ARO - Information Draft

Andrea:

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Thanks, Angela

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Sent: Tuesday, March 22, 2011 11:13 AM

To: Crescente, Angela

Cc: Pienaar, Lesley; Wiseman, Sara

Subject: RE: Note 4 - ARO - Information Draft

Angela,

I am working on the updates you submitted for the ARO footnotes and have a few follow up items/questions.

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Thanks, Andrea

From: Pienaar, Lesley

Sent: Tuesday, March 22, 2011 9:39 AM

To: Fackler, Andrea

Subject: FW: Note 4 - ARO - Information Draft

Attachment to Response to KU AG-1 Question No. 201 Page 1562 of 2028 Charnas

From: Crescente, Angela

Sent: Friday, March 18, 2011 5:08 PM

**To:** Pienaar, Lesley **Cc:** Wiseman, Sara

**Subject:** Note 4 - ARO - Information Draft

Lesley,

Here are my changes:

<< File: Note 4 - ARO - LKE Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - LGE Information Draft.docx >>

#### Attachment to Response to KU AG-1 Question No. 201 Page 1563 of 2028 Charnas

### Clark, Ed

From:

Fackler, Andrea

Sent:

Tuesday, March 22, 2011 11:13 AM

To:

Crescente, Angela

Cc: Subject: Pienaar, Lesley; Wiseman, Sara RE: Note 4 - ARO - Information Draft

Angela,

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- 1) We need to include the amount of ARO depr. and amort. for the 3 months ended 3/31/10 for all three companies. Can you provide me with this amount? No need to cut and paste into a new document as long as you maintain the support in your final tie-out.
- 2) In the KU file you sent, you deleted the last sentence of the paragraph directly below the table. You did not delete it from the LG&E or LKE files. Please confirm what you would like here.
- 3) I made some other updates to formatting and wording to help clean up some of the language surrounding all the amounts we had to report at yearend for predecessor and successor and also included some additional language from the yearend report, so please review the updated copies of the footnotes on Sharepoint and let me know if you have any questions.

Thanks, Andrea

From: Pienaar, Lesley

Sent: Tuesday, March 22, 2011 9:39 AM

To: Fackler, Andrea

Subject: FW: Note 4 - ARO - Information Draft

From: Crescente, Angela

Sent: Friday, March 18, 2011 5:08 PM

**To:** Pienaar, Lesley **Cc:** Wiseman, Sara

Subject: Note 4 - ARO - Information Draft

Lesley,

Here are my changes:

<< File: Note 4 - ARO - LKE Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> << File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Information Draft.docx >> </ File: Note 4 - ARO - KU Info

Attachment to Response to KU AG-1 Question No. 201 Page 1564 of 2028 Charnas

## Clark, Ed

From:

Crescente, Angela

Sent:

Friday, March 18, 2011 5:08 PM

To: Cc: Pienaar, Lesley Wiseman, Sara

Subject:

Note 4 - ARO - Information Draft

Tracking:

Recipient

Read

Pienaar, Lesley

Read: 3/18/2011 5:24 PM

Wiseman, Sara

Lesley,

Here are my changes:







Note 4 - ARO - Note 4 - ARO - KU Note 4 - ARO - LKE Information... LGE Information...

#### Note 4 - Asset Retirement Obligations

A summary of the Company's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

	1	RO Vet ssets		ARO bilities	_	ulatory ssets
As of December 31, 2010	\$	97	\$	(103)	\$	9
ARO accretion and depreciation Reclassification for retired assets		?		(?)		?
ARO revaluation - change in estimates		2		<b>?</b>		5
ARO settlements		?		?		(?)
Removal cost incurred	-	?		?		?
As of Error! Reference source not	\$	?	S	(??)	s	7?

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit was recorded in "Depreciation and amortization" in the Consolidated Statements of Income for \$X million for the 3 months ended March 31, 3011 the Successor of \$2 million in 2010 and \$4 million for the Predecessor for the ARO accretion and depreciation expense. The offsetting regulatory credit recorded was \$4 million in 2009 and 2008 for the ARO accretion and depreciation expense. The ARO liabilities are offset by cash settlements that have not yet been applied. Therefore, ARO net assets, ARO liabilities and regulatory assets balances do not net to zero.

LKE's AROs are primarily related to the final retirement of assets associated with generating units and natural gas mains and wells. LKE transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

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Attachment to Response to KU AG-1 Question No. 201 Page 1566 of 2028 Charnas

#### Note 4 - Asset Retirement Obligations

A summary of KU's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

	O Net sets		ARO bilities	Regulatory Assets	← <b>(For</b> п	natted Table		September 1	- 3
As of December 31, 2010	\$ 52	\$	(54)	\$ 2					
ARO accretion and depreciation	?		(?)	?					
Reclassification for retired assets	(2)		ž	2					
ARO revaluation - change in estimates	<u> </u>		<del>(??)</del>	2	1000				
ARO settlements	(?)			(?)			- 57		
Removal cost incurred	 ?		?						
As of March 31, 2011	\$ ?	<u>\$</u>	(??)	\$ ?					

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit was recorded in "Depreciation and amortization" in the Statements of Income for the Successor of \$1 million in 2010 and \$2 million for the Predecessor of \$X million for the 3 months ended March 31, 2011 for the ARO accretion and depreciation expense. The offsetting regulatory credit recorded was \$2 million in 2009 and 2008 for the ARO accretion and depreciation expense. The ARO liabilities are offset by cash settlements that have not yet been applied, d. Therefore, ARO net assets, ARO liabilities and regulatory assets balances do not net to zero due to the cash settlements

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KU's AROs are primarily related to the final retirement of assets associated with generating units. KU transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

#### Note 4 - Asset Retirement Obligations

A summary of LG&E's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

	1	RO Vet Ssets	ARO <u>bilities</u>	_	ılatory ssets
As of December 31, 2010	\$	45	\$ (49)	\$	7
ARO accretion and depreciation		?	(?)		7
Reclassification-for-retired assets					
ARO revoluation - change in estimates		?	2		?
ARO settlements		?	?		(?)
Removal cost incurred		7	?		?
As of Error! Reference source not	\$	?	\$ (??)	\$	??

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit was recorded in "Depreciation and amortization" in the Statements of Income of \$X million for the 3 months ended March 31, 2011 for the Successor of \$1 million in 2010 and \$2 million for the Predecessor for the ARO accretion and depreciation expense. The offsetting regulatory credit recorded was \$2 million in 2009 and 2008 for the ARO accretion and depreciation expense. The ARO liabilities are offset by cash settlements that have not yet been applied.—Therefore, ARO net assets, ARO liabilities and regulatory assets balances do not net to zero.

LG&E's AROs are primarily related to the final retirement of assets associated with generating units and natural gas mains and wells. LG&E transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

Formatted: Not Highlight

Attachment to Response to KU AG-1 Question No. 201 Page 1568 of 2028 Charnas

#### Clark, Ed

From:

Leenerts, Patricia

Sent: To: Wednesday, March 16, 2011 2:05 PM Wacker, Diana; Crescente, Angela

Subject:

ARO Projects - Asbestos

I have gotten 4 of the 5 asbestos related ARO folders prepared. I need to talk to you about the 120578 – Retire Main. Per Tom Reith "This was 75-feet of bare steel line replaced in 2006 with coated steel. This actually should not be ARO because I do not believe it had the coal tar coating. I confirmed through Oracle and Smallworld the pipe purchased was 4-inch, FBE [Fusion Bonded Epoxy] coated pipe." I confirmed that it also did not have asbestos wrapping.

Let me know when you want to discuss these projects. Go ahead and setup a meeting realizing that I will be out Monday (21<sup>st</sup>) and Tuesday (22<sup>nd</sup>)...(with a very small possibility of being out on Wednesday.

Angela indicated that we would not be settling the Well projects in March. There is also some question as how to handle the retirements in that there are other plant accounts/depr groups than those of just the well parents. I cannot setup the estimates on the Well projects until I know if I need another task for the non-parent plant accounts/depr groups, which Angela was considering the way to go.

Thanks,

Pat 502-627-3811

Attachment to Response to KU AG-1 Question No. 201 Page 1569 of 2028 Charnas

# Clark, Ed

From:

Sent:

PowerPlantAlerts@eon-us.com Wednesday, March 16, 2011 6:00 AM Crescente, Angela PowerPlant Alerts - LGE-KU - AIP - ARO

To:

Subject:

Project 131113 has ARO

login to powerplant

Attachment to Response to KU AG-1 Question No. 201 Page 1570 of 2028 Charnas

### Clark, Ed

From:

Wiseman, Sara

Sent:

Monday, March 14, 2011 9:14 PM

To:

Cosby, David

Cc: Subject: Crescente, Angela; Rose, Bruce RE: ARO discussion Thursday 3/17

David:

Early afternoon would be best. Unfortunately, I have not had as much time as I would like to prepare for this discussion, so it may not take long. Angela will be coming along. Bruce is off, but he can leave some comments for Angela to convey on his behalf. We can try to answers any other questions...

From: Cosby, David

**Sent:** Monday, March 14, 2011 11:34 AM **To:** Wiseman, Sara; Crescente, Angela **Subject:** ARO discussion Thursday 3/17

Good morning. We are meeting with the plant Budget Analysts this Thursday and I was holding a time slot to discuss ARO items and any other Property Accounting things you would like to discuss. Are there time frames that work well for you? We can focus on mid morning or early afternoon if you like.

Also, are their specific topics on the ARO that you want to send out beforehand so folks can be prepared to talk about them? Thanks.

David L. Cosby Jr.

Manager - Fin. & Budgeting - Power Generation

LG&E and KU Energy Services
502-627-2499

david.cosby@lge-ku.com

Attachment to Response to KU AG-1 Question No. 201 Page 1571 of 2028 Charnas

### Clark, Ed

From: Nitsche, John P <jpnitsche@pplweb.com>

**Sent:** Monday, March 14, 2011 3:39 PM

To: Crescente, Angela Subject: ARO Probability Factor

Attachments: Book3.xls

Per our discussion, this is how we derived a probability factor.

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Attachment to Response to KU AG-1 Question No. 201 Page 1572 of 2028 Charnas

# **ARO Probability Weighted Cash Flow Factor**

	Weighted <u>Factor</u>	<u>Probability</u>	Cost <u>Range</u>
•	-2.00%	10%	-20%
	0.00%	30%	0%
	12.00%	60%	20%
Probability Adjustment	:::::::10%	100%	

Overview: 10% chance that costs will be under estimated costs 30% chance that costs will equal estimated costs

60% chance that costs will exceed estimated costs

Attachment to Response to KU AG-1 Question No. 201 Page 1573 of 2028 Charnas

## Clark, Ed

From:

Cosby, David

Sent:

Monday, March 14, 2011 11:34 AM Wiseman, Sara; Crescente, Angela

To: Subject:

ARO discussion Thursday 3/17

Good morning. We are meeting with the plant Budget Analysts this Thursday and I was holding a time slot to discuss ARO items and any other Property Accounting things you would like to discuss. Are there time frames that work well for you? We can focus on mid morning or early afternoon if you like.

Also, are their specific topics on the ARO that you want to send out beforehand so folks can be prepared to talk about them? Thanks.

David L. Cosby Jr.

Manager - Fin. & Budgeting - Power Generation
LG&E and KU Energy Services
502-627-2499
david.cosby@lge-ku.com

#### Attachment to Response to KU AG-1 Question No. 201 Page 1574 of 2028 Charnas

### Clark, Ed

From:

Benfield, Jonathan E < JEBenfield@pplweb.com>

Sent:

Wednesday, February 16, 2011 11:24 AM

To: Cc: Crescente, Angela Wiseman, Sara

Subject:

RE: AROs

Thank you - I'll let you know if we have any other questions.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, February 16, 2011 10:32 AM

To: Benfield, Jonathan E

Cc: Wiseman, Sara L; Charnas, Shannon Lee; Elmore, Barry L; Nitsche, John P; Brusko, Susan M

Subject: RE: AROs

Jon,

Please see the attached per your request.

Thanks, Angela

From: Wiseman, Sara

Sent: Wednesday, February 16, 2011 8:45 AM

To: 'Benfield, Jonathan E'

Cc: Charnas, Shannon; Elmore, Barry; Nitsche, John P; Brusko, Susan M; Crescente, Angela

Subject: RE: AROs

Jon:

Angela Crescente will be sending a file shortly. Hopefully, the file will be helpful to Paul, but if something else is needed we will be glad to work on it.

From: Benfield, Jonathan E [mailto:JEBenfield@pplweb.com]

Sent: Tuesday, February 15, 2011 5:59 PM

To: Wiseman, Sara

Cc: Charnas, Shannon; Elmore, Barry; Nitsche, John P; Brusko, Susan M

Subject: AROs

Hi Sara - hope you're doing well.

Paul Farr (our CFO) has a meeting tomorrow that he's prepping for and he asked us up here if we had any details on the composition of LKE's AROs as of 12/31/10. All I had handy was your footnote disclosure, which gives a high level overview but not with a whole lot of detail. Can you provide me with a breakdown of the major components of the ARO liability balance at year-end and particularly what the underlying obligations relate to?

John/Susan - if either of you have these details, I'll take them from anyone that has them. My sense from Kindra was that this meeting was tomorrow, so I just figured I'd try anyone and everyone (sorry).

Thanks! Jon - X6498

#### Attachment to Response to KU AG-1 Question No. 201 Page 1575 of 2028 Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1576 of 2028 Charnas

#### Clark, Ed

From:

Crescente, Angela

Sent:

Wednesday, February 16, 2011 10:32 AM

To:

'Benfield, Jonathan E'

Cc:

Wiseman, Sara; Charnas, Shannon; Elmore, Barry; 'Nitsche, John P'; 'Brusko, Susan M'

Subject:

RE: AROs

Attachments:

LKE ARO Liabilities as of December 31, 2010.xlsx

Jon,

Please see the attached per your request.

Thanks, Angela

From: Wiseman, Sara

Sent: Wednesday, February 16, 2011 8:45 AM

To: 'Benfield, Jonathan E'

Cc: Charnas, Shannon; Elmore, Barry; Nitsche, John P; Brusko, Susan M; Crescente, Angela

Subject: RE: AROs

Jon:

Angela Crescente will be sending a file shortly. Hopefully, the file will be helpful to Paul, but if something else is needed we will be glad to work on it.

From: Benfield, Jonathan E [mailto:JEBenfield@pplweb.com]

Sent: Tuesday, February 15, 2011 5:59 PM

To: Wiseman, Sara

Cc: Charnas, Shannon; Elmore, Barry; Nitsche, John P; Brusko, Susan M

Subject: AROs

Hi Sara - hope you're doing well.

Paul Farr (our CFO) has a meeting tomorrow that he's prepping for and he asked us up here if we had any details on the composition of LKE's AROs as of 12/31/10. All I had handy was your footnote disclosure, which gives a high level overview but not with a whole lot of detail. Can you provide me with a breakdown of the major components of the ARO liability balance at year-end and particularly what the underlying obligations relate to?

John/Susan - if either of you have these details, I'll take them from anyone that has them. My sense from Kindra was that this meeting was tomorrow, so I just figured I'd try anyone and everyone (sorry).

Thanks! Jon - X6498

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Attachment to Response to KU AG-1 Question No. 201 Page 1577 of 2028 Charnas

ARO Description	Liability as of 12/31/2010
Asbestos	26,872,846.35
Gas Mains	12,110,213.80
Landfills, Ash Ponds	55,970,131.79
Coal Storage	1,436,040.04
Gypsum Stack	4,090,206.93
Other Miscellaneous Generation Assets	662,395.35
Gas Wells	5,490,261.06
	106,632,095.32
Less: Cash Payments not applied	(3,192,810.22)
Total Ending Liability	103,439,285.10

#### Attachment to Response to KU AG-1 Question No. 201 Page 1578 of 2028 Charnas

## Clark, Ed

From:

Wiseman, Sara

Sent:

Wednesday, February 16, 2011 10:11 AM

To:

Crescente, Angela

Subject:

Re: LKE ARO Liabilities as of December 31, 2010.xls

Looks good to me. Pls send. Thx. Sent from my BlackBerry!

From: Crescente, Angela

Sent: Wednesday, February 16, 2011 10:08 AM

To: Wiseman, Sara

Subject: LKE ARO Liabilities as of December 31, 2010.xls

Sara:

Let me know what you think about this.

<<LKE ARO Liabilities as of December 31, 2010.xls>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1579 of 2028 Charnas

## Clark, Ed

From:

Sent:

Crescente, Angela Wednesday, February 16, 2011 10:09 AM Wiseman, Sara

To:

Subject:

LKE ARO Liabilities as of December 31, 2010.xls

Sara:

Let me know what you think about this.



LKE ARO Liabilities as of ...

Attachment to Response to KU AG-1 Question No. 201 Page 1580 of 2028 Charnas

ARO Description	Liability as of 12/31/2010
Asbestos	26,872,846.35
Gas Mains	12,110,213.80
Landfills, Ash Ponds	55,970,131.79
Coal Storage	1,436,040.04
Gypsum Stack	4,090,206.93
Other Miscellaneous Generation Assets	662,395.35
Gas Wells	5,490,261.06
	106,632,095.32
Less: Cash Payments not applied	(3,192,810.22)
Total Ending Liability	103,439,285.10

#### Attachment to Response to KU AG-1 Question No. 201 Page 1581 of 2028 Charnas

#### Clark, Ed

From:

Wiseman, Sara

Sent:

Wednesday, February 16, 2011 8:45 AM

To:

'Benfield, Jonathan E'

Cc:

Charnas, Shannon; Elmore, Barry; Nitsche, John P; Brusko, Susan M; Crescente, Angela

Subject:

RE: AROs

Jon:

Angela Crescente will be sending a file shortly. Hopefully, the file will be helpful to Paul, but if something else is needed we will be glad to work on it.

From: Benfield, Jonathan E [mailto:JEBenfield@pplweb.com]

Sent: Tuesday, February 15, 2011 5:59 PM

To: Wiseman, Sara

Cc: Charnas, Shannon; Elmore, Barry; Nitsche, John P; Brusko, Susan M

Subject: AROs

Hi Sara - hope you're doing well.

Paul Farr (our CFO) has a meeting tomorrow that he's prepping for and he asked us up here if we had any details on the composition of LKE's AROs as of 12/31/10. All I had handy was your footnote disclosure, which gives a high level overview but not with a whole lot of detail. Can you provide me with a breakdown of the major components of the ARO liability balance at year-end and particularly what the underlying obligations relate to?

John/Susan - if either of you have these details, I'll take them from anyone that has them. My sense from Kindra was that this meeting was tomorrow, so I just figured I'd try anyone and everyone (sorry).

Thanks! Jon - X6498

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Attachment to Response to KU AG-1 Question No. 201 Page 1582 of 2028 Charnas

#### Clark, Ed

From: Wiseman, Sara

Sent: Wednesday, February 16, 2011 8:25 AM

To: Crescente, Angela

Subject: FW: AROs

From: Benfield, Jonathan E [mailto:JEBenfield@pplweb.com]

Sent: Tuesday, February 15, 2011 5:59 PM

To: Wiseman, Sara

Cc: Charnas, Shannon; Elmore, Barry; Nitsche, John P; Brusko, Susan M

Subject: AROs

Hi Sara - hope you're doing well.

Paul Farr (our CFO) has a meeting tomorrow that he's prepping for and he asked us up here if we had any details on the composition of LKE's AROs as of 12/31/10. All I had handy was your footnote disclosure, which gives a high level overview but not with a whole lot of detail. Can you provide me with a breakdown of the major components of the ARO liability balance at year-end and particularly what the underlying obligations relate to?

John/Susan - if either of you have these details, I'll take them from anyone that has them. My sense from Kindra was that this meeting was tomorrow, so I just figured I'd try anyone and everyone (sorry).

Thanks! Jon - X6498

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Attachment to Response to KU AG-1 Question No. 201 Page 1583 of 2028 Charnas

## Clark, Ed

From:

Ritchey, Stacy

Sent:

Tuesday, February 15, 2011 3:39 PM

To: Subject: Crescente, Angela ARO Explanation

Angela,

One of our project managers has requested guidance to know when something qualifies for ARO and how to treat it. Rusty suggested you or someone in Property may have a white paper or a short description of ARO which details what it is so we can provide guidance to our managers for the future. Do you have anything that would work? Thanks,

Stacy Ritchey Sr Budget Analyst Project Engineering BOC Phone: (502) 627-4388 EW Brown Phone (859) 748-4455

Fax: (502) 217-4980

Attachment to Response to KU AG-1 Question No. 201 Page 1584 of 2028 Charnas

# Clark, Ed

From:

Sent:

PowerPlantAlerts@eon-us.com Tuesday, February 15, 2011 6:00 AM Crescente, Angela PowerPlant Alerts - LGE-KU - AIP - ARO

To:

Subject:

Project 130510 has ARO

login to powerplant

Attachment to Response to KU AG-1 Question No. 201 Page 1585 of 2028 Charnas

# Clark, Ed

From: Sent:

PowerPlantAlerts@eon-us.com Friday, February 11, 2011 6:00 AM Crescente, Angela PowerPlant Alerts - E.ON - AIP - ARO

To:

Subject:

Project 124382 has ARO

login to powerplant

Attachment to Response to KU AG-1 Question No. 201 Page 1586 of 2028 Charnas

#### Clark, Ed

From:

Crescente, Angela

Sent: To: Friday, February 04, 2011 9:19 AM 'erin.m.schroering@us.pwc.com'

Cc: Subject: Wiseman, Sara RE: ARO question

Tracking:

Recipient

Read

'erin.m.schroering@us.pwc.com'

Wiseman, Sara

Read: 2/4/2011 9:53 AM

Erin,

The actual calculation for the revaluation was performed in our automated system (PowerPlant) so there is no excel spreadsheet that can show you the calculation that was performed. What I can tell you is that I get a quote from someone in the field for how much it would cost in today's dollars to perform the obligation. I then input the inflation rate in the system to inflate the dollars to the future cost and then input a discount rate to discount the amount back to the present value. The inflation rate and the discount rate were provided to us by our Treasury Department.

Thanks, Angela

From: erin.m.schroering@us.pwc.com [mailto:erin.m.schroering@us.pwc.com]

Sent: Thursday, February 03, 2011 6:29 PM

To: Crescente, Angela Subject: ARO question

Hi Angela,

I am working on closing out the testing relating to an ARO control and was wondering if I could get some support for your Q3 revaluation. The control I am testing is included below.

Could I obtain the necessary support from the revaluation at Q3 - the information you gathered in order to determine the need and the amount of the ARO and maybe just a brief explanation of how you ensure you're calculating the amount in line with the standards?

I believe in Q3 I obtained the JE from you, but maybe if I could come up there and walk through the process for your calculation that would help get me what I need.

Let me know what works for you at your earliest convenience.

Thanks.

Erin

Erin M Schroering Assurance Associate

PricewaterhouseCoopers LLP (pwc.com) 500 West Main Street Suite 1800 Louisville, KY 40202-4264 Telephone: +1 502 585 7743 Facsimile: +1 813 281 6504 Mobile: +1 502 419 0288 Attachment to Response to KU AG-1 Question No. 201 Page 1587 of 2028 Charnas

erin.m.schroering@us.pwc.com

Print less, think more.

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Attachment to Response to KU AG-1 Question No. 201 Page 1588 of 2028 Charnas

## Clark, Ed

From:

Wiseman, Sara

Sent:

Friday, February 04, 2011 9:03 AM

To: Subject: Crescente, Angela FW: ARO Ashpond Landfill Gypsum

From: Wiseman, Sara

Sent: Friday, June 25, 2010 8:26 AM

To: Heun, Jeff

Subject: FW: ARO Ashpond Landfill Gypsum

Hi Jeff: FYI This is information for our meeting on Monday morning. This is how we valued our AROs in 2003.

From: Wiseman, Sara

Sent: Wednesday, June 23, 2010 4:25 PM

To: Cosby, David; Welsh, Elaine; Dowd, Deborah

**Cc:** Crescente, Angela; Rose, Bruce **Subject:** ARO Ashpond Landfill Gypsum

Hi all:

Here is the information we have for the ashpond, landfill and gypsum stacker.

From: Hilbert, Debbie

Sent: Wednesday, June 23, 2010 3:45 PM

To: Wiseman, Sara Subject: Ashpond



Debbie Hilbert, CPS Senior Secretary E.ON U.S. LLC 502-627-4676

# Relative Sizes for Current and Former Ash Treatment and Disposal Facilities LG&E Energy Corporation

Facility	Electric	Kentucky Utilities						
Туре	Cane Run	Mill Creek	Trimble County	E.W. Brown	Ghent	Green River	Tyrone	
Active ATB	27	50	95	116	150	38	9	
Emergency Pond	16	4	20	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
Former ATB	Not Applicable*	Not Applicable	Not Applicable	Not Applicable*	126*	68 <sup>#</sup>	Not Applicable	
Landfill <sup>5</sup>	110	98	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
Gypsum Stack Out	Not Applicable	Not Applicable	Not Applicable	Not Applicable	10.1	Not Applicable	Not Applicable	
Scrubber Sludge Lagoon	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	11	Not Applicable	
Source Information:	Topographic Map	Topographic Map:	Topographic Map	KPDES Calculations	Consultant Drawing	Aerial Photograph & KPDES Drawing	KPDES Calculations	

#### Notes:

ATB - Ash Treatment Basin (also referred to as ash pond).

- \* Indicates that although the facility has one or more former ATBs, they ATBs are covered by areas already accounted for under this listing.
- # Indicates that the facility has more than one area included in the calculation of the area.
- <sup>5</sup> All permitted landfills are bonded to cover closure costs for a "worst case" scenario.

Emergency Ponds, Gypsum Stack Out Areas, and Scrubber Sludge Lagoons would likely require closure procedures similar to those for an ATB.

#### Summary of Ash Treatment and Disposal Facilities

		Sur	nmary or Asn Treatme	ent and Disposal Facil	ities	
Cane Run	Mill Creek	Trimble County	E.W. Brown	Ghent	Green River	Tyrone
Includes former	Includes an active	Includes an active	The active ATB at the	The ATB has been	The ATBs are located on the east side	The life of the ATB
ATBs located	ATB, an active	ATB and an	site is built on top of	expanded into the	of the property and include one active	has been extended
beneath the	landfill, and three	Emergency Pond	the old ATB for the	nearby ravines. The	and two former ATBs incorporated into	many times over
northern portion of	emergency pond	(both of which are	facility. The former	former ATB is used in	the current layout. The Scrubber Sludge	through beneficial
the existing landfill	areas.	"zero-discharge"	ATB is therefore	the current	Lagoon is in the same area, but is a	reuse of reclaimed
and an active ATB.		facilities). Although	completely included	configuration. The	"zero-discharge" facility.	ash. As a result,
Adjacent to the		the site has a landfill	within the surface	Gypsum Stack-Out is		there is only one ATB
active ATB is an		permit, no material	area shown for the	a lined area used for		location for this site.
Emergency Pond.		has ever been	active ATB.	gypsum recovery. A		1.5
		landfilled at the site,		"walk away" scenario		• .
		nor or there plans to		is unlikely for closure		
		initiate such activities.		but requirements		
				should be less		
				stringent & costly due		
				to the liner & market		
				for gypsum.		
						144

# Supporting Information for Ponding Areas LG&E Energy Corporation

[		Approx. Measurements					
Facity	Basin Name	Length	Width	Area (ft²)	Area (acres)	Area to Use (acres)	Notes
^	Active ATB	500	2,200	1,100,000	25,3	27	KPDES says active ATB = 27 acres
CaneRun	Emergency Pond	700	1,000	700,000	16.1	16	
	Active ATB	2.000	1,100	2,200,000	50.5	50	KPDES says active ATB = 42.8 acres
		300	300	90.000	2.1	1	10 00000
Mill Ceek	Emergency Pond	150	300	45,000	1.0	4	
		150	400	60,000	1.4		
					·		
	<u> </u>	850	3,000	2,550,000	58.5	95	
rimble:Jounty	Active ATB	450	1,200	540,000	12.4		95
innoicounty		900	1,000	900,000	20.7		
	Emergency Pond	1,100	850	935,000	21.5	20	Plant Brochure said 20 acres
EW Eown	Active ATB					116	KPDES says ATB=115 acres; Plant says 116 acres
	Active ATB	2,900	2,050	5,945,000	136.5	150	KPDES says active ATB = 149.9 acres
Ghnt	Former ATB	1,500	3,650	5,475,000	125.7	126	KPDES says former ATBs = 121.8 acres
	Gypsum Stack Out	1,100	400	440,000	10.1	10	
	Active ATB	2,320	720	1,670,400	38.3	38	KPDES says active ATB = 36.1 acres
	ACTIVE AT D	1,500	1,540	2,310,000	53.0		
GreerRiver	Former ATB	1,790	370	662,300	15.2	68	KPDES says former ATBs = 54 acres
	Scrubber Sludge	610	630	384,300	8.8		<u> </u>
	Lagoon	250	300	75,000	1.7	11	KPDES says Scrubber Sludge Lagoon = 10.9 acres
	T		1		1	T	Lyopeo - ATD 7.0
Tythe	Active ATB		1		1	8	KPDES says ATB=7.8 acres; Plant says 9 acres

Attachment to Response to KU AG-1 Question No. 201 Page 1591 of 2028 Charnas

#### Clark, Ed

From:

erin.m.schroering@us.pwc.com

Sent:

Thursday, February 03, 2011 6:29 PM

To: Subject: Crescente, Angela ARO question

Hi Angela,

I am working on closing out the testing relating to an ARO control and was wondering if I could get some support for your Q3 revaluation. The control I am testing is included below.

Could I obtain the necessary support from the revaluation at Q3 - the information you gathered in order to determine the need and the amount of the ARO and maybe just a brief explanation of how you ensure you're calculating the amount in line with the standards?

I believe in Q3 I obtained the JE from you, but maybe if I could come up there and walk through the process for your calculation that would help get me what I need.

Let me know what works for you at your earliest convenience.

Thanks,

Erin

Erin M Schroering Assurance Associate

PricewaterhouseCoopers LLP (pwc.com) 500 West Main Street Suite 1800 Louisville, KY 40202-4264 Telephone: +1 502 585 7743 Facsimile: +1 813 281 6504 Mobile: +1 502 419 0288

erin.m.schroering@us.pwc.com

Print less, think more.

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Attachment to Response to KU AG-1 Question No. 201 Page 1592 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Wednesday, February 02, 2011 8:04 PM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

ARO disclosure

Sara -

Jon Benfield asked me a question today that I think he has already asked you. He was asking about the reg liability for the AROs and what actually makes it up. I'd like to walk through that. I think this is actually the \$7M (at LKE) that was the previous note you were asking me about. Can we discuss tomorrow?

Thanks,

# Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

Attachment to Response to KU AG-1 Question No. 201 Page 1593 of 2028 Charnas

# Clark, Ed

From: Sent:

PowerPlantAlerts@eon-us.com Thursday, January 27, 2011 6:00 AM Crescente, Angela PowerPlant Alerts - E.ON - AIP - ARO

To:

Subject:

Project 130515 has ARO Project 132590 has ARO

login to powerplant

Attachment to Response to KU AG-1 Question No. 201 Page 1594 of 2028 Charnas

# Clark, Ed

From:

Crescente, Angela

Sent:

Wednesday, January 26, 2011 3:27 PM Leenerts, Patricia

To:

Subject:

RE: Form 1 - ZORN ARO

Tracking:

Recipient

Leenerts, Patricia

Read

Read: 1/26/2011 3:40 PM

It is in Steam in PowerPlant and on the Plant Report.

From: Leenerts, Patricia

Sent: Wednesday, January 26, 2011 3:20 PM

To: Crescente, Angela

Subject: Form 1 - ZORN ARO

Did you mention a potential problem with Zorn...it is showing up in Steam not OP.

#### Attachment to Response to KU AG-1 Question No. 201 Page 1595 of 2028 Charnas

CI	la	r	k,	Ed

From: Crescente, Angela Sent: Tuesday, January 25, 2011 11:04 AM To: 'jeffrey.m.zoglmann@us.pwc.com' Wiseman, Sara Cc: Subject: RE: ARO's Attachments: Depreciation Study0001.pdf; New Energy0001.pdf Jeff, The person you need to talk to for the gas mains is Paul Stratman, and the person you need to talk to for Paddy's Run is Steve Legler. The decommissioning date that was used for Paddy's Run ASB was in accordance with the long term budget plan expected 12/2015. The gas main date was developed using the 2006 depreciation study for account G376.00 which is 44 years (composite remaining life) less 4 years to get from 2006-2010 and add that to 2010 which will get you to 12/2050. The dates for the ash ponds were determined by using an Economic Life Assessment of Generation Assets by New Energy Associates, L.L.C. Please see the attached support. Thanks, Angela From: jeffrey.m.zoglmann@us.pwc.com [mailto:jeffrey.m.zoglmann@us.pwc.com] Sent: Wednesday, January 19, 2011 3:03 PM

**To:** Crescente, Angela **Subject:** ARO's

Angela,

I was able to reach out to Jeff and David, and they are providing support. I have a few additional questions about other items:

- 1) Who would I reach out to in order to get support for the \$41M gas main and service abandons (LG&E)?
- 2) For the Paddy's Run ASB for \$4.6M, the support said this came from a quote received in April 2009. Who would I reach out to in order to get the support (LG&E)?
- 3) How was the decommissioning date calculated? I would need some sort of documentation for each item I selected (ash ponds, gas mains, and paddy's run ASB).

Thanks!			

#### Attachment to Response to KU AG-1 Question No. 201 Page 1596 of 2028 Charnas

Jeff Zoglmann | PricewaterhouseCoopers LLP

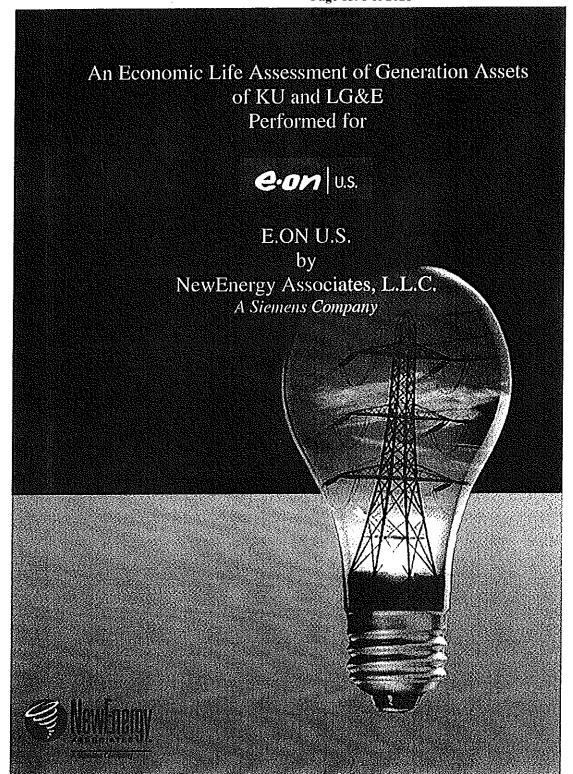
500 West Main Street Suite 1800 | Louisville, KY 40202 | 宮: 502.585.7706 | 悬: 813.281.6173 | 図: jeffrey.m.zoglmann@us.pwc.com

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#### LOUISVILLE GAS AND ELECTRIC GAS PLANT

# TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION RATES AS OF DECEMBER 31, 2006

			NET		воок		CALCULATED ANNUAL		COMPOSITE
		SURVIVOR	SALVAGE	ORIGINAL	DEPRECIATION	FUTURE	ACCRUAL	ACCRUAL	REMAINING LIFE
	ACCOUNT	CURVE	PERCENT	COST (4)	RESERVE (5)	ACCRUALS (8)	AMOUNT (7)	(8)=(7)/(4)	(8)±(6)/(7)
	(1)	(2)	(3)	(44)	(9)	(a)	(1)	(4)4(1)1(4)	(a)-(oh(t)
	DEPRECIABLE PLANT								
	PRODUCTION PLANT								
350.20	RIGHTS OF WAY	55-R4	0	63,678,14	70,451	(6,773)	0	_	_
351,20	COMPRESSOR STATION STRUCTURES	50-R2.5	(5)	1,696,319,20	743,281	1,037,855	28,509	1.68	36.4
351,30	MEASURING AND REGULATING STATION STRUCTURES	55-R2.5	(5)	10,879.61	14,474	(3,050)	۵	-	-
351,40	OTHER STRUCTURES	50-R3	(5)	1,236,356,49	807,089	491,085	13,172	1.07	37.3
352.10	STORAGE LEASEHOLDS AND RIGHTS	65-R4	O	548,241.14	569,590	(21,349)	0	•	•
352 20	RESERVOIRS	55-R4	O.	400,511.40	446,270	(45,759)	0	-	•
352,30	NONRECOVERABLE NATURAL GAS	50-SQ	C	9,648,855,00	7,165,705	2,483,150	88,298	0.92	28.1
352,40	WELL DRILLING	55-R2,5	(20)	2,622,897.61	2,710,350	437,125	11,504	0,44	38.0
352.50	WELL EQUIPMENT	50-R2.5	(20)	6,142,762.54	728,355	6,642,963	248,732	4.05	26.7
353 00	LINES	45-S1	(10)	12,786,744,73	6,643,582	7,421,838	271,552	2.12	27.3
354.00 355.00	COMPRESSOR STATION EQUIPMENT	50-R3	(5)	13,961,769.92	6,978,446	7,681,418	205,495	1.47	37.4 23.1
355.00	MEASURING AND REGULATING EQUIPMENT	40-R1	(5)	387,809,47	252,799	154,402	6,677 241,956	1.72 2.44	30.3
357.00	PURIFICATION EQUIPMENT OTHER EQUIPMENT	45-R2 40-R2	(15) 0	9,934,256.85 1,033,211,58	4,093,652 269,736	7,330,742 783,476	29,031	2.81	25.3
337.00	OTHER EQUIPMENT	40-R2	ū	1,000,211,00	208,750	703,470	25,001	20,	20.3
	TOTAL PRODUCTION PLANT			60,474,293.68	31,493,780	34,367,123	1,145,028	1.89	30.0
	•								
	TRANSMISSION PLANT								
365,20	RIGHTS OF WAY	65-\$3	6	220,659,05	199.377	21,282	655	0.30	32,5
367.00	MAINS	65-R2.5	(10)	12,673,432.30	11,578,244	2,362,536	56,156	0.44	42.1
		00-102,0	(10)	12,070,402.50		2,002,000			
	TOTAL TRANSMISSION PLANT			12,894,091.35	11,777,821	2,383,818	56,811	0.44	42.0
	DISTRIBUTION PLANT								
									•
374,22	OTHER DISTRIBUTION LAND RIGHTS	65-53	٥	74,018,23	72,775	1,242	28	0.04	44.4
375.10	STRUCTURES & IMPROVEMENTS - CITY GATE STATION	55-R3	(5)	224,018.51	112,776	122,443	2,764	1.23	44,3
375,20	STRUCTURES & IMPROVEMENTS - OTHER DISTRIBUTION	30-L1	(5)	505,354,95	96,486	434,139	38,955	7.71	11.1
376,00	MAINS	65-R2.5	(30)	262,334,573.57	92,672,522	248,362,426	5,656,026	2.16	43.9
378.00	MEASURING AND REGULATING STATION EQUIP - GENERAL	41-S0	(10) -	7,853,390,14	1,861,536	6,777,193	288,766	3,58	23.5
379,00	MEASURING AND REGULATING STATION EQUIP - CITY GATE		(15)	3,846,544.97	1,301,803	3,121,721	113,941	2.96	27.4
380 00	SERVICES	42-S0	(55)	125,366,090,71	47,057,089	147,260,348	6,308,119	5.03	23.3
381.00	METERS	31-R1.5	a	21,171,719,50	3,872,688	17,299,033	1,103,358	5.21	15.7
382.00 383.00	METER INSTALLATIONS HOUSE REGULATORS	20-1.0	0	9,136,341.11	(817,817)	9,954,158	1,020,340	11,17	9.8 30.4
384.00	HOUSE REGULATORS HOUSE REGULATOR INSTALLATIONS	45-R3	(5)	4,598,091.61	1,202,930	3,625,064	119,212	2,59 3,17	30.4 29.7
385,00		45-R2	(5)	4,707,358.65	513,259	4,429,471	149,262		29.7 26.4
387.00	MEASURING AND REGULATING STATION EQUIPMENT OTHER EQUIPMENT	40-\$2.5	0	159,361.88	114,537	44,825	1,699 2,038	1,07 3,99	26.4 19.8
501 00	OTHER PROPERTY	40-52	Ų	51,112.34	10,802	40,311	2,038	3,99	0,61
	TOTAL DISTRIBUTION PLANT			440,027,976.17	148,071,386	441,472,374	14,804,508	3.346	29,8





A Siemens Company

NewEnergy Associates, LLC performed a Life Assessment of E.ON U.S.'s generating assets to determine the effective useful economic lives of these assets. Figure 12 summarizes the results of this Life Assessment study and shows the projected end of useful economic life for E.ON U.S.'s coal fired steam assets. The assessment of the economics of continuing to operate E.ON U.S.'s combustion turbine assets; the Haefling units, Cane Run 11, Paddy's Run 11 & 12 and Zorn 1, indicates that these assets should continue to be economic throughout the time horizon of the study (through 2035).

Figure 12: End of Economic Life

Unit Name	Projected End of Economic Life		
Brown 1	2026		
Brown 2	2026		
Brown 3	2026		
Cane Run 4	2018		
Cane Run 5	2022		
Cane Run 6	2023		
Ghent 1	2026		
Ghent 2	2027		
Green River 3	2018		
Green River 4	2018		
Mill Creek 1	2026		
Mill Creek 2	2026		
Tyrone 3	2018		



#### Attachment to Response to KU AG-1 Question No. 201 Page 1600 of 2028 Charnas

#### Clark, Ed

From:

Wiseman, Sara

Sent:

Tuesday, January 25, 2011 9:15 AM

To:

Griffin, Sharon; Leenerts, Patricia

Cc:

Clark, Lynda; Wacker, Diana; Riggs, Eric; Crescente, Angela

Subject:

FW: ARO revaluations and the Form 1

I think we will need to move the revaluation amounts around on page 204.

From: Nitsche, John P [mailto:jpnitsche@pplweb.com]

Sent: Tuesday, January 25, 2011 9:07 AM

To: Wiseman, Sara

Subject: RE: ARO revaluations and the Form 1

Since we don't have any AROs for our US regulated operations, the issue hasn't come up. When I read the wording of instruction #4, I do think it's referring to AROs; you could always note that this is what you did in some type of Supplemental Note Information.

From: Wiseman, Sara [mailto:Sara.Wiseman@lge-ku.com]

Sent: Monday, January 24, 2011 8:57 PM

To: Nitsche, John P

Subject: ARO revaluations and the Form 1

John:

We are working on the FORM 1 and trying to decide which columns to put various adjustments in. I was wondering which columns you have put ARO revaluation amounts in? I looked at the instructions at the top of page 204 and noticed no. 4. This instruction talks about asset retirement costs and wondering if that meant AROs.

Any ideas?

Thanks....

Sara Wiseman

Manager, Property Accounting

Office 502.627.3189

Cell 502.338.0886

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Attachment to Response to KU AG-1 Question No. 201 Page 1602 of 2028 Charnas

#### Clark, Ed

From:

jeffrey.m.zoglmann@us.pwc.com

Sent:

Wednesday, January 19, 2011 3:03 PM

To:

Crescente, Angela

Subject:

ARO's

Angela,

I was able to reach out to Jeff and David, and they are providing support. I have a few additional questions about other items:

- 1) Who would I reach out to in order to get support for the \$41M gas main and service abandons (LG&E)?
- 2) For the Paddy's Run ASB for \$4.6M, the support said this came from a quote received in April 2009. Who would I reach out to in order to get the support (LG&E)?
- 3) How was the decommissioning date calculated? I would need some sort of documentation for each item I selected (ash ponds, gas mains, and paddy's run ASB).

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1	П	a	11	k	5!

Jeff Zoglmann | PricewaterhouseCoopers LLP

500 West Main Street Suite 1800 | Louisville, KY 40202 | 雪: 502,585,7706 | 墨: 813.281.6173 | 区: jeffrey.m.zoglmann@us.pwc.com

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#### Clark, Ed

From:

Wiseman, Sara

Sent:

Wednesday, January 19, 2011 9:13 AM

To:

Crescente, Angela

Subject:

FW: ARO Ashpond Landfill Gypsum

From: Heun, Jeff

Sent: Tuesday, September 14, 2010 12:02 PM

To: Wiseman, Sara

Subject: RE: ARO Ashpond Landfill Gypsum

Sara,

I looked over the Stantec(FMSM) closure cost estimate and updated it based on pricing attained from current ongoing projects as well as escalating the 2002 numbers to 2010 numbers. I came up with an estimate of \$120K per acre to close a pond using Tyrone as the basis, see attached spreadsheet. Also looking over the list of active Ash Pond a new one needs to be added for Brown as the Aux Pond was placed into service in 2008 and is approximately 40 acres in size. I would double check with David Millay to make sure all the CCP storage ponds are accounted for as I believe the Aux Pond was the only one missing.

**JBH** 



Pond Closure Costs.xlsx

From: Wiseman, Sara

Sent: Friday, June 25, 2010 8:26 AM

To: Heun, Jeff

Subject: FW: ARO Ashpond Landfill Gypsum

Hi Jeff: FYI This is information for our meeting on Monday morning. This is how we valued our AROs in 2003.

From: Wiseman, Sara

**Sent:** Wednesday, June 23, 2010 4:25 PM **To:** Cosby, David; Welsh, Elaine; Dowd, Deborah

**Cc:** Crescente, Angela; Rose, Bruce **Subject:** ARO Ashpond Landfill Gypsum

Hi all:

Here is the information we have for the ashpond, landfill and gypsum stacker.

Attachment to Response to KU AG-1 Question No. 201 Page 1604 of 2028  $\,$ Charnas

From: Hilbert, Debbie

Sent: Wednesday, June 23, 2010 3:45 PM
To: Wiseman, Sara
Subject: Ashpond

<< File: Ashpond.pdf >>

Debbie Hilbert, CPS Senior Secretary E.ON U.S. LLC 502-627-4676

Attachment to Response to KU AG-1 Question No. 201 Page 1605 of 2028 Charnas

Activity	2002		V V . *4 .	T ( 10 (		
Activity	Cost	<b>Escalated Cost</b>	Actual Cost	<b>Adjusted Costs</b>	Units	Total Cost
Engineering	\$0	\$0	\$250,000	\$250,000	1	\$250,000
Construction		/				
Mobilization	\$21,000	\$33,471		\$33,471	1	\$33,471
Site Grading	\$225,000	\$358,616		\$358,616	1	\$358,616
1' Clay Cover	\$0	\$0	\$8	\$8	18000	\$144,000
1' Vegetative Cover	\$0	\$0	\$6	\$6	18000	\$108,000
Drainage Ditches	\$25	\$40		\$40	3500	\$139,462
Seeding & Mulching	\$0	\$0	\$2,000	\$2,000	11	\$22,000
Demolition	\$20,000	\$31,877		\$31,877	1	\$31,877
Post Closure Care						
Ground Water Monitoring	\$2,480	\$3,953	1	\$3,953	1	\$3,953
Maintenace	\$3,000	\$4,782		\$4,782	1	\$4,782

**Sub-Total** \$1,096,160 Bond \$8,221

Contingency 20% \$219,232

Total for 11 acres \$1,323,613

Total Per Acre \$120,328.43

#### Clark, Ed

From:

Wiseman, Sara

Sent:

Tuesday, January 18, 2011 3:41 PM

To:

Crescente, Angela

Subject:

FW: ARO's

From: Sneed, Lydia

Sent: Tuesday, January 18, 2011 3:40 PM

To: Wiseman, Sara

Cc: Elmore, Barry; McDaniels, Jason

Subject: ARO's

Sara,

Below is PPL again; I did not finding anything different. You may not need to include all the assumptions listed below; leave out any assumption who likelihood of changing is minor or the impact of the change would be minor.

The sensitivities below reflect an evaluation of the change based solely on a change in that assumption.

	Change in Assumption	Impact on ARO Liability	
Retirement Cost	10%/(10)%	\$32/\$(32)	
Discount Rate	0.25%/(0.25)%	\$(31)/\$34	
Inflation Rate	0.25%/(0.25)%	\$41/\$(37)	

From: Elmore, Barry

Sent: Tuesday, January 18, 2011 2:56 PM

To: Wiseman, Sara

Cc: Sneed, Lydia; Crescente, Angela

Subject: RE: Helio Again

Sara,

I think we probably need something similar to PPL's unless you have a better suggestion. We will pull another competitor or two and send it down your way to give you another viewpoint to see if it may give you an easier method/process. Lydia is looking at that now.

Attachment to Response to KU AG-1 Question No. 201 Page 1607 of 2028 Charnas

#### **Barry Elmore**

Manager, Financial Accounting and Reporting LG&E and KU Energy LLC 502-627-3580

From: Wiseman, Sara

Sent: Tuesday, January 18, 2011 2:47 PM

To: Elmore, Barry

Cc: Sneed, Lydia; Crescente, Angela

Subject: RE: Hello Again

Depends on what exactly you are looking for. Angela does need clarification on that. If it looks like the table in PPL's report it is not very likely that you receive it today. Depending on what is decided, it might be lengthy process to run the calculations in the system.

From: Elmore, Barry

Sent: Tuesday, January 18, 2011 2:18 PM

**To:** Wiseman, Sara **Cc:** Sneed, Lydia **Subject:** Hello Again

Hi Sara,

Do you think we will be able to get the Sensitivity Analysis around the ARO's today to complete that section of the note?

I know that is probably a sore subject<sup>®</sup> Nobody likes sensitivity analysis.

#### Barry Elmore

Manager, Financial Accounting and Reporting LG&E and KU Energy LLC 502-627-3580

Attachment to Response to KU AG-1 Question No. 201 Page 1608 of 2028 Charnas

# Clark, Ed

From:

Sent:

PowerPlantAlerts@eon-us.com Tuesday, January 18, 2011 6:00 AM Crescente, Angela PowerPlant Alerts - E.ON - AIP - ARO

To:

Subject:

Project 130511 has ARO

login to powerplant

Attachment to Response to KU AG-1 Question No. 201 Page 1609 of 2028 Charnas

### Clark, Ed

From:

Wiseman, Sara

Sent:

Monday, January 17, 2011 8:49 AM

To: Subject:

Crescente, Angela FW: ARO question

From: Nitsche, John P [mailto:jpnitsche@pplweb.com]

Sent: Monday, January 17, 2011 8:07 AM

To: Wiseman, Sara

Subject: RE: ARO question

Sara,

I'm thinking it's the PPL general ledger account number being used.....the account number that shows on the Nvision balance sheet statements. For PPL we use 23000 for the long term portion of the ARO and 23001 for the current portion of the ARO liability.

From: Wiseman, Sara [mailto:Sara.Wiseman@lge-ku.com]

Sent: Sunday, January 16, 2011 4:15 PM

To: Nitsche, John P

Cc: Crescente, Angela Michelle

Subject: ARO question

### ARO liability (INSERT PPL account #)

John:

We are trying to finish up the reporting package. The above line is at the top of the ARO tab. Do you know what is needed for this? Any help would be appreciated.

Sara Wiseman

Manager, Property Accounting

Office 502.627.3189

Cell 502.338.0886

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#### Clark, Ed

From:

Charnas, Shannon

Sent:

Sunday, January 16, 2011 3:09 PM

To:

Wiseman, Sara

Cc:

Crescente, Angela; Pienaar, Lesley

Subject:

RE: ARO tab of reporting package

LG&E and KU didn't tie out to the consolidation file from Greg.

Yes, last comment is on mapping.

#### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

**Sent:** Sunday, January 16, 2011 3:02 PM

To: Charnas, Shannon

**Cc:** Crescente, Angela; Pienaar, Lesley **Subject:** RE: ARO tab of reporting package

#### Shannon:

I will work with Angela to add FCD on Monday morning. Additionally, if Lesley can provide more direction on the PPL account numbers, we will also take care of that. We can contact someone at PPL to find out about if we need to—I'm copying Lesley on this so maybe she can advise.

I'm not sure what is meant by LGE and KU not matching the supporting documentation, but I will try to catch you early tomorrow so you can show me.

I'm guessing your last comment has to do with the mapping as opposed to the dollar amounts. Once Angela's schedule included FCD it will tie in total to the amounts that Greg is showing in his file (on 2 different lines).

From: Charnas, Shannon

**Sent:** Sunday, January 16, 2011 1:54 PM **To:** Crescente, Angela; Wiseman, Sara **Subject:** ARO tab of reporting package

It looks like FCD is not included in this information. Also, it looks like the LG&E and KU numbers do not tie to the supporting documentation. Also, the instructions indicate PPL account numbers should be listed. Please make appropriate updates in the Final version and let me know when updated (by noon tomorrow).

It looks like you and Greg do not have the same ARO accounts and RWIP accounts rolling up to the balance. Difference appears to be on LG&E and FCD.

#### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

#### Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Wednesday, March 30, 2011 6:02 PM

To:

Crescente, Angela

Subject:

RE: ARO Settlements

I found the problem.

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting?

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Can you call me when you get this email?

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 5:36 PM

**To:** PowerPlant Support **Subject:** RE: ARO Settlements

OK, it's out there with JE Code ARO RETIREMENT for LGE. The asset is Purc-CR Ash Pond.

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, March 30, 2011 5:27 PM

To: Crescente, Angela

Subject: RE: ARO Settlements

#### Angela,

I reviewed the data and everything looks fine.

I have a theory on why the gain loss posted in the gain loss column, and I think it's a Post program issue.

Can you create another URGL transaction for an asset where the gain loss default = Depr Exp and let me Post it in Dev or if you'd like I could search the CPR for an asset like the one you posted and create a retirement on it. Let me know if you want me to find an asset on my own or if you want to create the retirement for me in dev database.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 5:16 PM

To: PowerPlant Support

Subject: RE: ARO Settlements

Attachment to Response to KU AG-1 Question No. 201 Page 1613 of 2028 Charnas

OK, thanks.

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, March 30, 2011 4:30 PM

To: Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Angela,

I'll get connected to your database right now and investigate further and get back to you.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

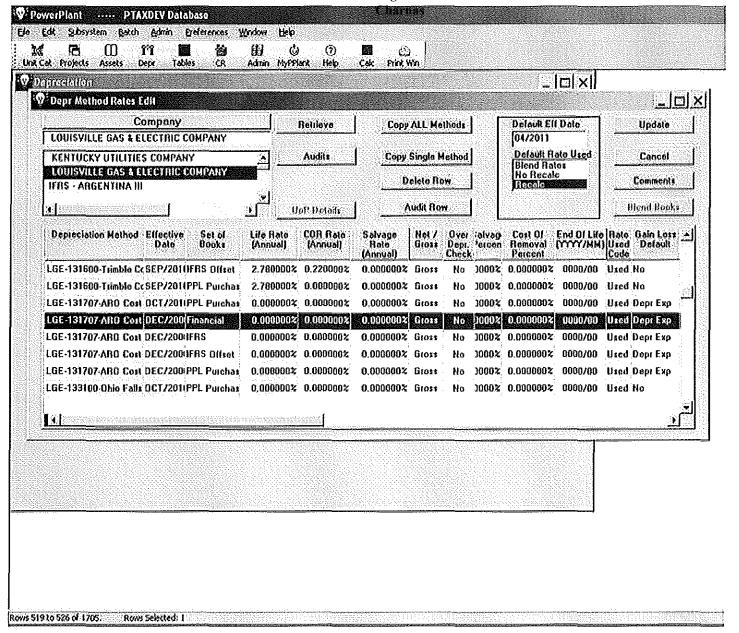
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

#### Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1615 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

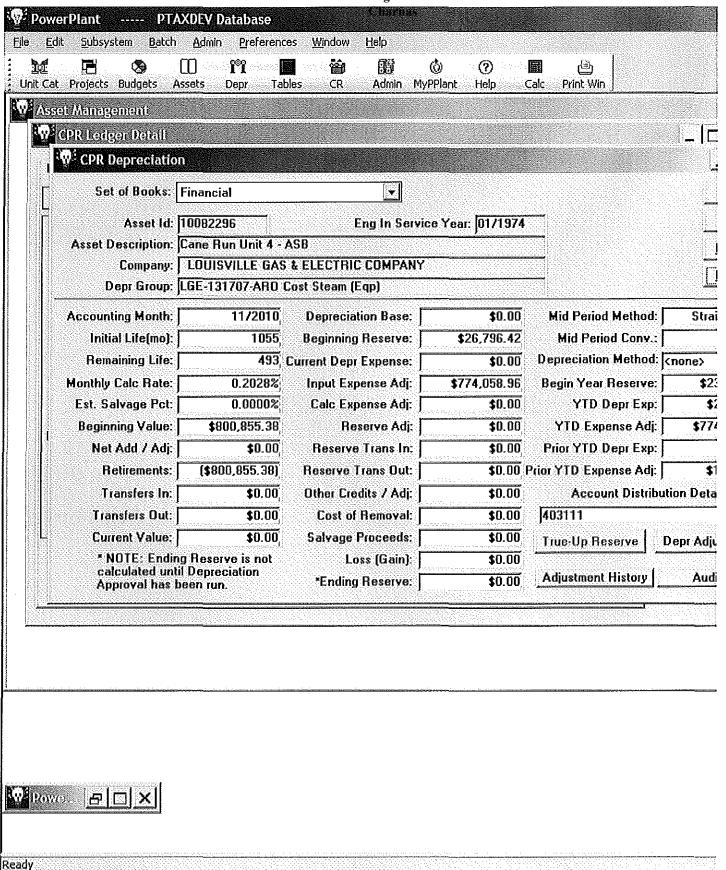
Jim,

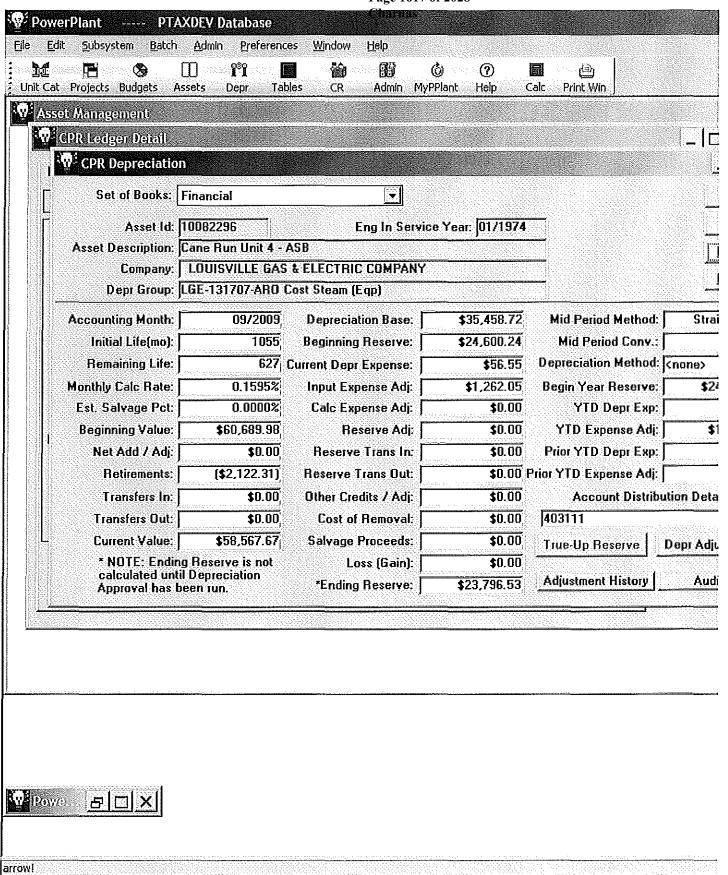
OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1618 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

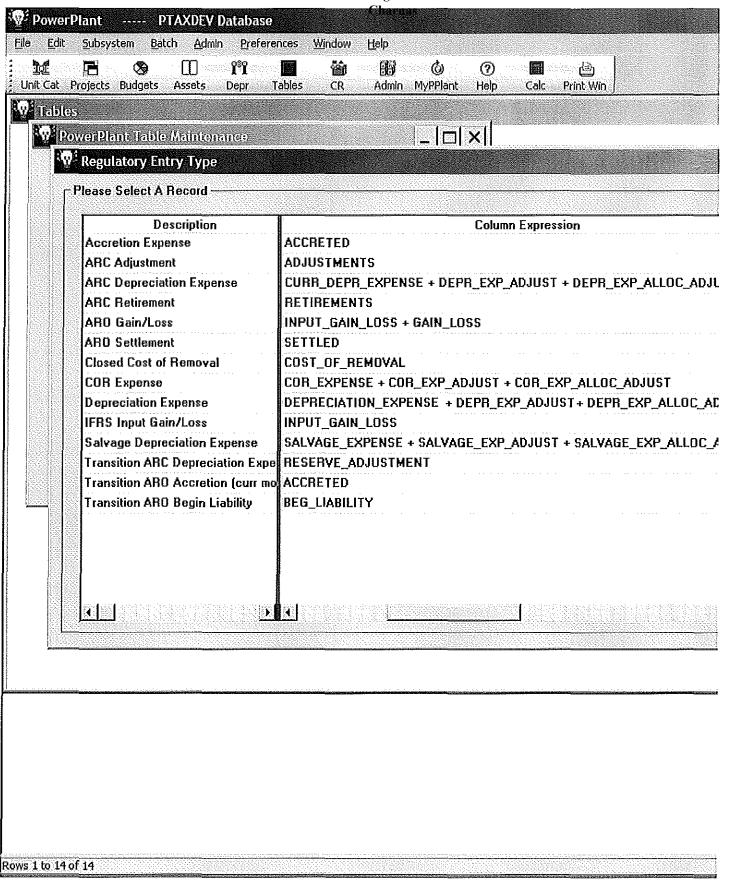
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1620 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

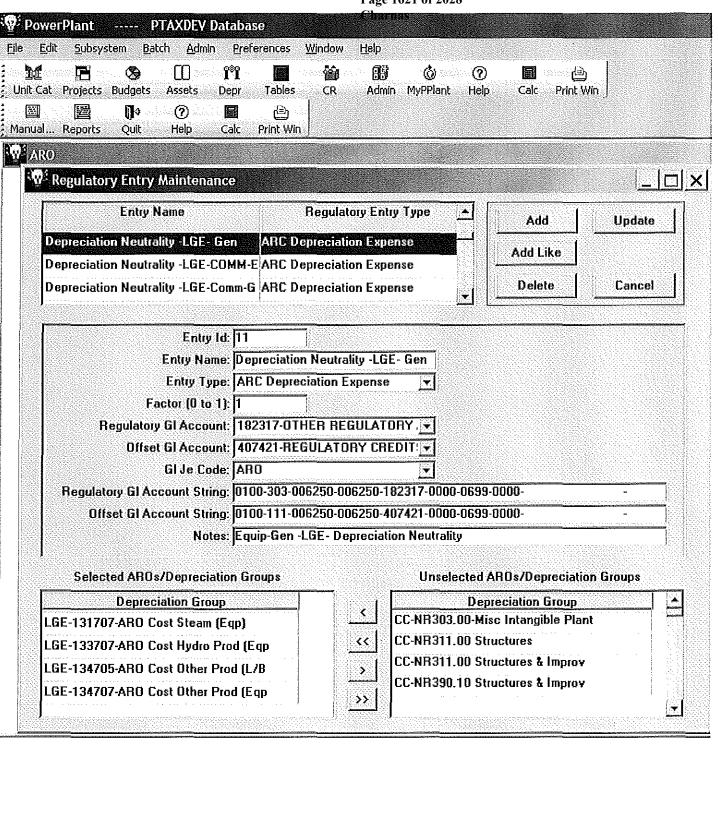
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

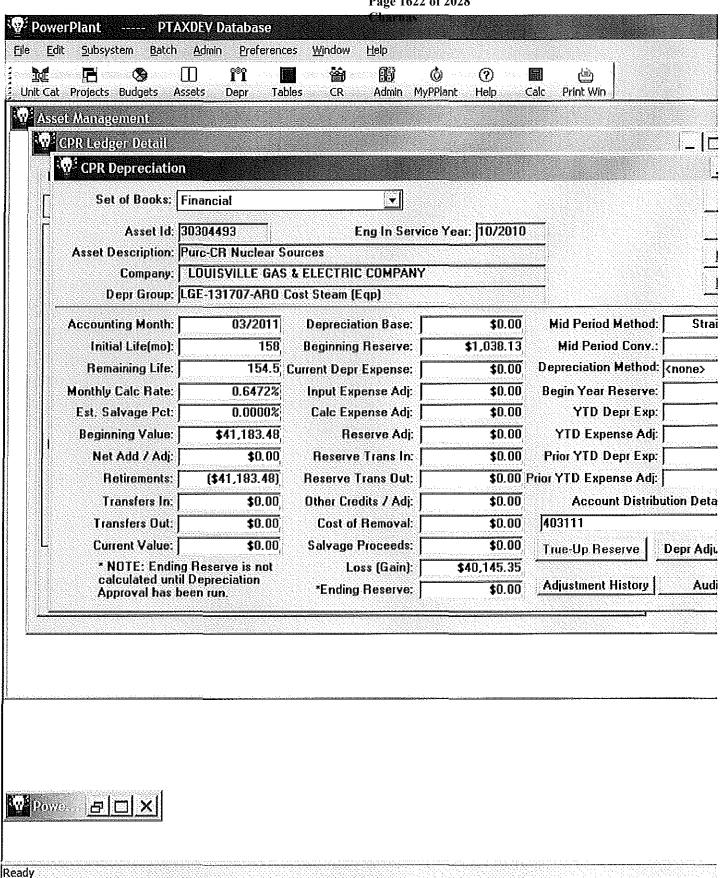
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1621 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1622 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1623 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1624 of 2028

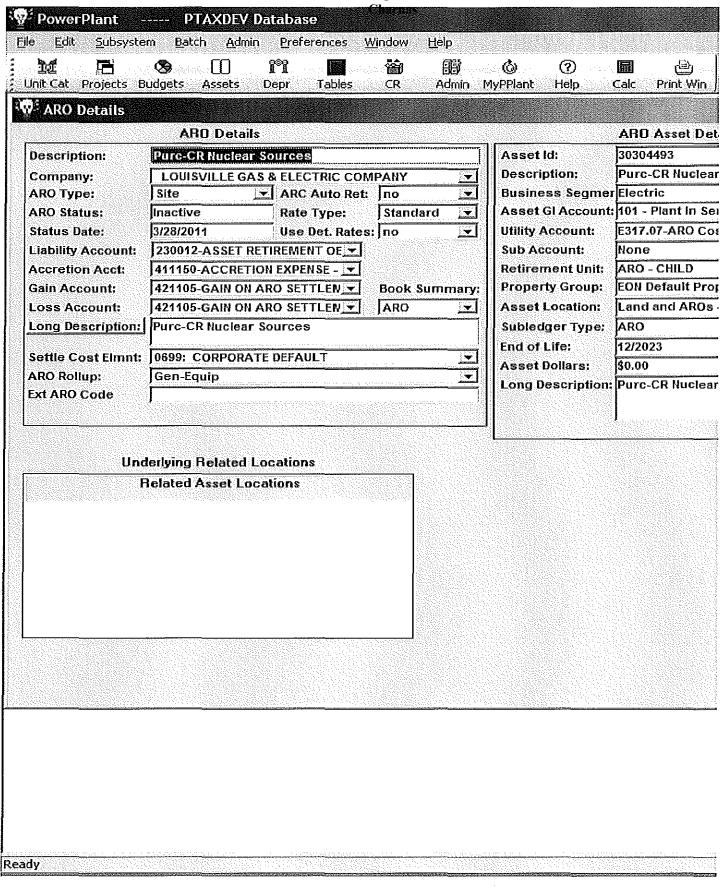
still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1625 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1626 of 2028

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Attachment to Response to KU AG-1 Question No. 201 Page 1627 of 2028

information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E,ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium.

Charnas persons or entities other than the intended recipient is not allowed. If you received this message and the

### Attachment to Response to KU AG-1 Question No. 201 Page 1628 of 2028 Charnas

### Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Wednesday, March 30, 2011 5:39 PM

To: Subject: Crescente, Angela RE: ARO Settlements

I'll post this in debug mode and get back to you shortly.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 5:36 PM

**To:** PowerPlant Support **Subject:** RE: ARO Settlements

OK, it's out there with JE Code ARO RETIREMENT for LGE. The asset is Purc-CR Ash Pond.

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, March 30, 2011 5:27 PM

To: Crescente, Angela

Subject: RE: ARO Settlements

#### Angela,

I reviewed the data and everything looks fine.

I have a theory on why the gain loss posted in the gain loss column, and I think it's a Post program issue.

Can you create another URGL transaction for an asset where the gain loss default = Depr Exp and let me Post it in Dev or if you'd like I could search the CPR for an asset like the one you posted and create a retirement on it. Let me know if you want me to find an asset on my own or if you want to create the retirement for me in dev database.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 5:16 PM

**To:** PowerPlant Support **Subject:** RE: ARO Settlements

OK, thanks.

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, March 30, 2011 4:30 PM

To: Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Angela,

I'll get connected to your database right now and investigate further and get back to you.

Attachment to Response to KU AG-1 Question No. 201 Page 1629 of 2028 Charnas

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

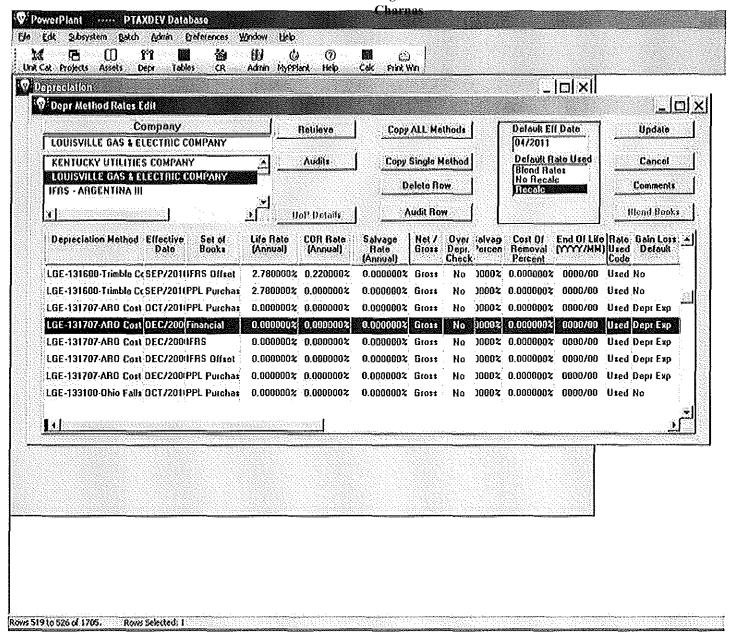
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana Subject: RE: ARO Settlements

The default already is "Depr Exp":



**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

#### Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1631 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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The New Address is:

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim.

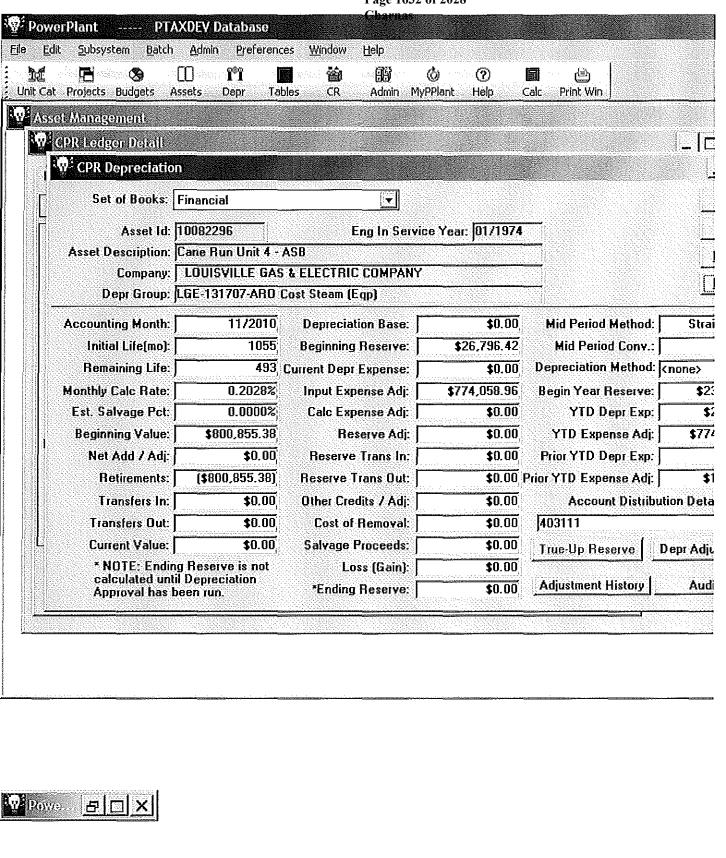
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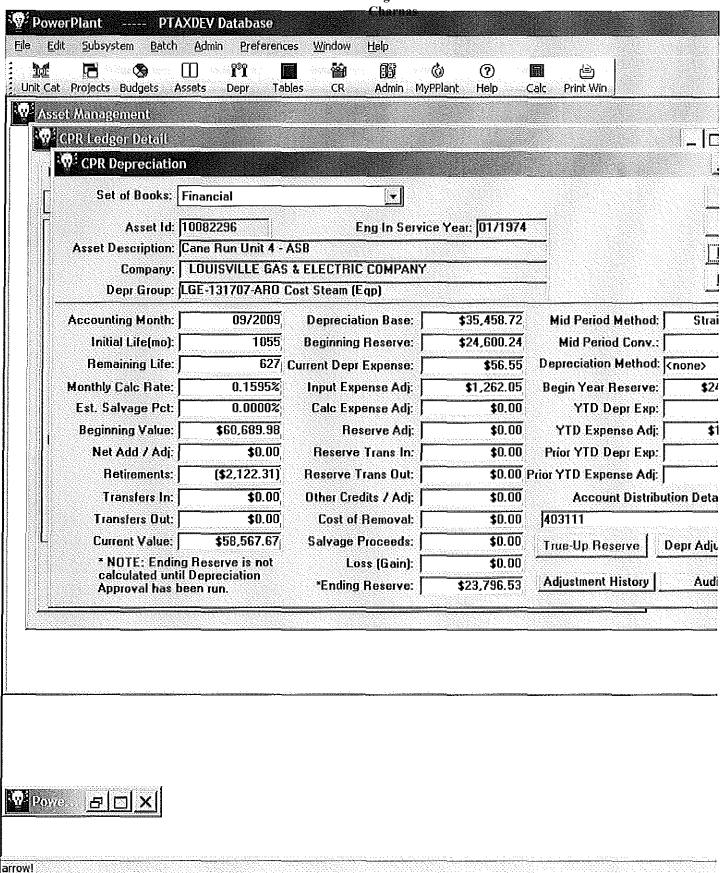
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Attachment to Response to KU AG-1 Question No. 201 Page 1632 of 2028



Ready

Attachment to Response to KU AG-1 Question No. 201 Page 1633 of 2028



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1634 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

**Subject:** RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

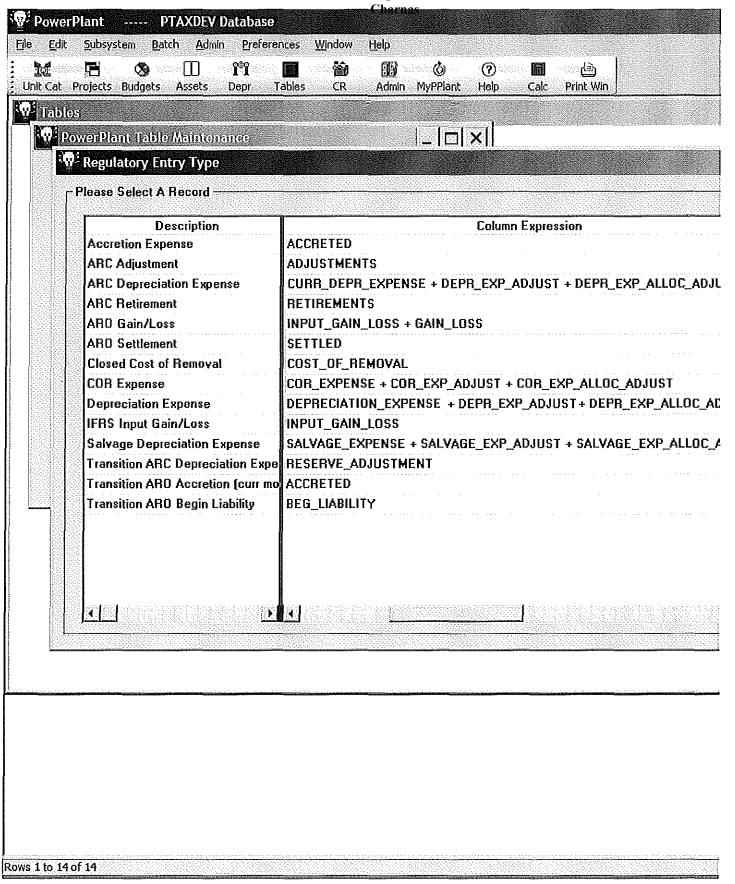
Subject: RE: ARO Settlements

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Attachment to Response to KU AG-1 Question No. 201 Page 1635 of 2028



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1636 of 2028

Charnas

**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
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Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

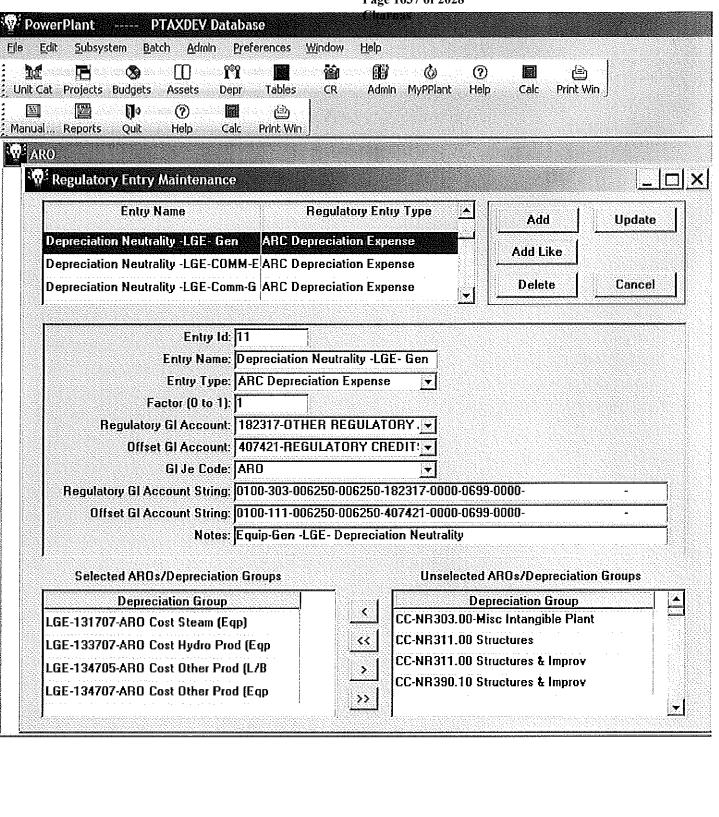
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

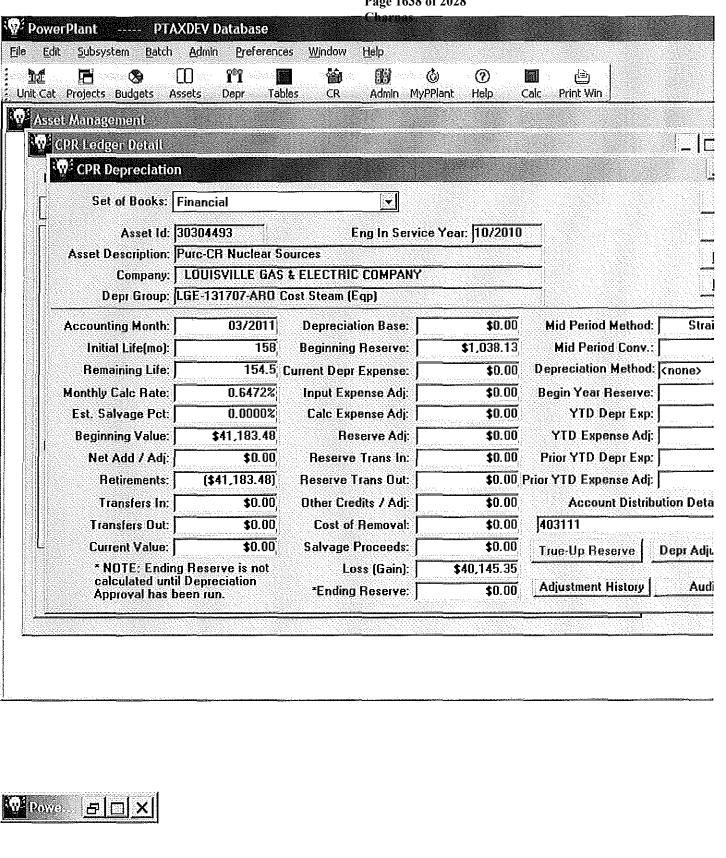
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Attachment to Response to KU AG-1 Question No. 201 Page 1637 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1638 of 2028



Ready

Attachment to Response to KU AG-1 Question No. 201 Page 1639 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

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- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

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Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

 $\begin{tabular}{lll} Attachment to Response to $KU$ AG-1 Question No. 201 \\ Page 1640 of 2028 \end{tabular}$ 

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

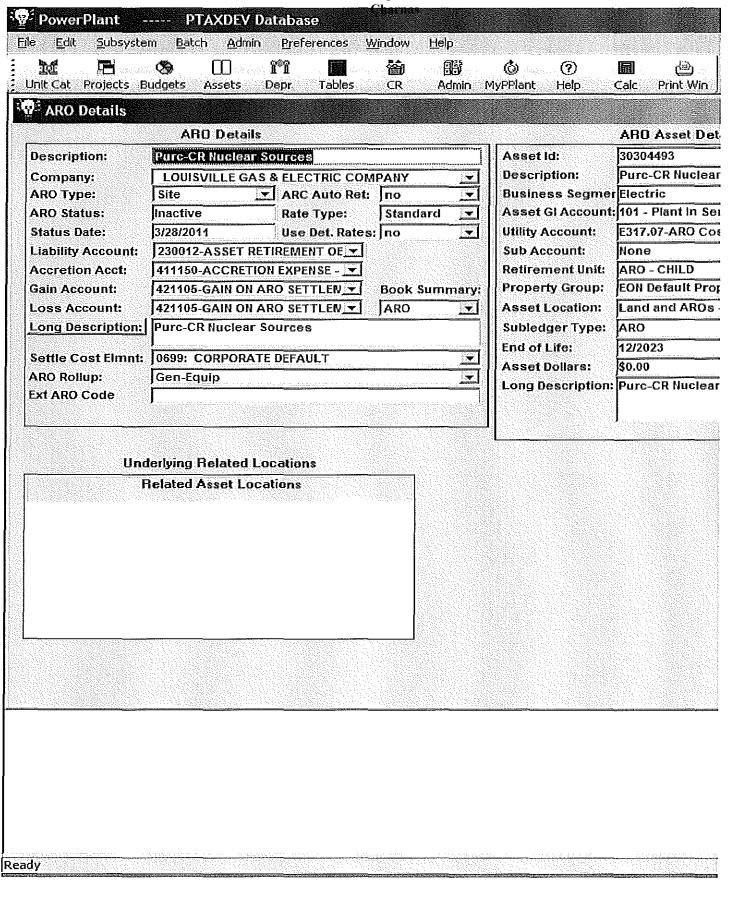
<<li>detestmarch.xlsx>>

<<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1641 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1642 of 2028

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storage medium.

### Attachment to Response to KU AG-1 Question No. 201 Page 1644 of 2028 Charnas

## Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Wednesday, March 30, 2011 5:27 PM

To: Subject:

Crescente, Angela RE: ARO Settlements

Angela,

I reviewed the data and everything looks fine.

I have a theory on why the gain loss posted in the gain loss column, and I think it's a Post program issue.

Can you create another URGL transaction for an asset where the gain loss default = Depr Exp and let me Post it in Dev or if you'd like I could search the CPR for an asset like the one you posted and create a retirement on it. Let me know if you want me to find an asset on my own or if you want to create the retirement for me in dev database.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 5:16 PM

To: PowerPlant Support

Subject: RE: ARO Settlements

OK, thanks.

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, March 30, 2011 4:30 PM

To: Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Angela,

I'll get connected to your database right now and investigate further and get back to you.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

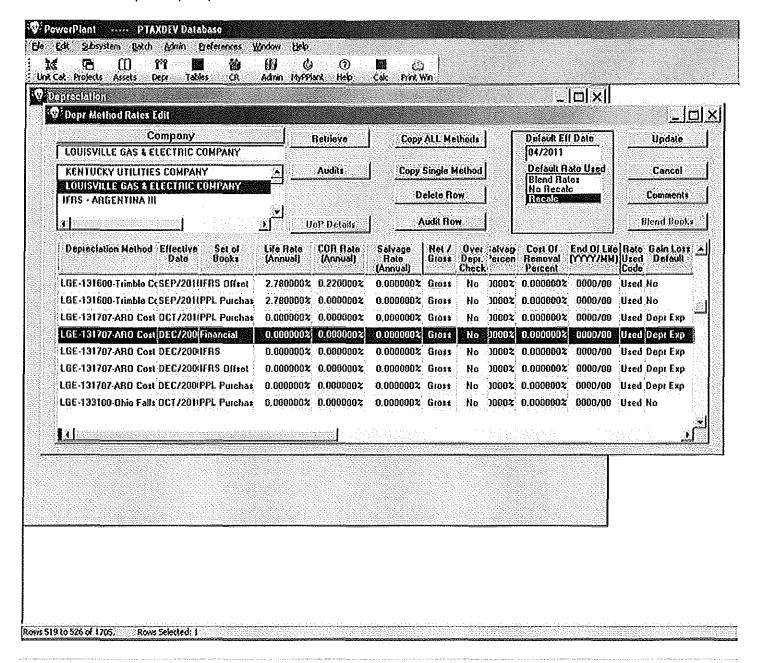
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

Attachment to Response to KU AG-1 Question No. 201 Page 1646 of 2028

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

**Subject:** FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

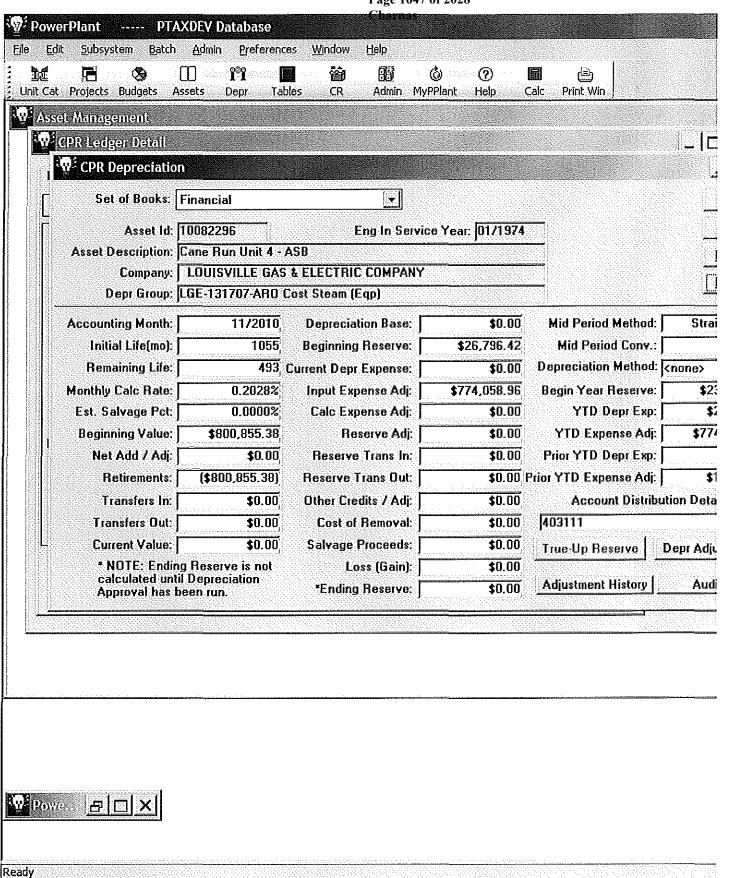
OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

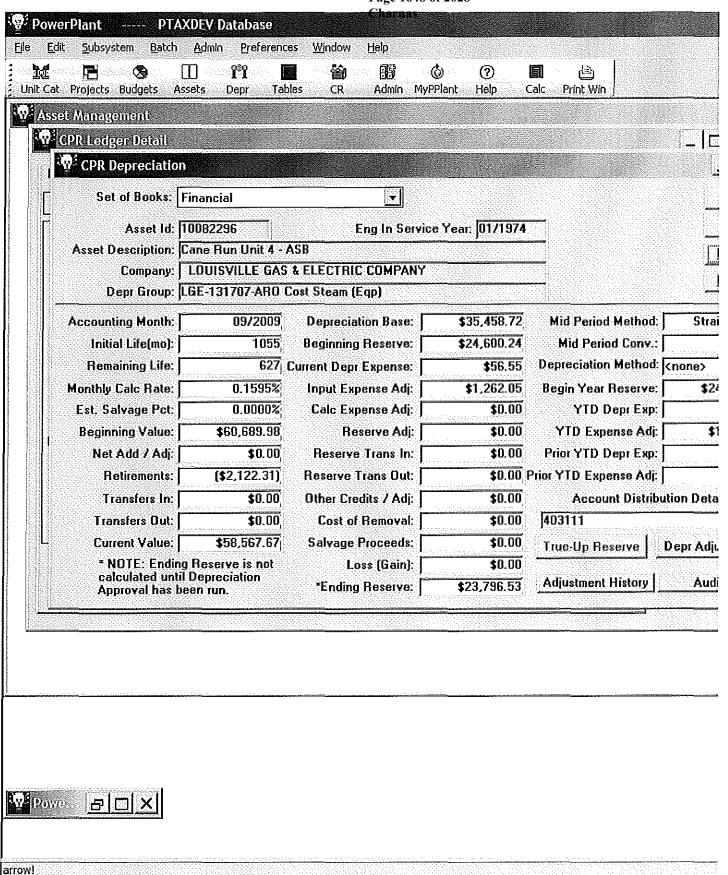
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I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1647 of 2028





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1649 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

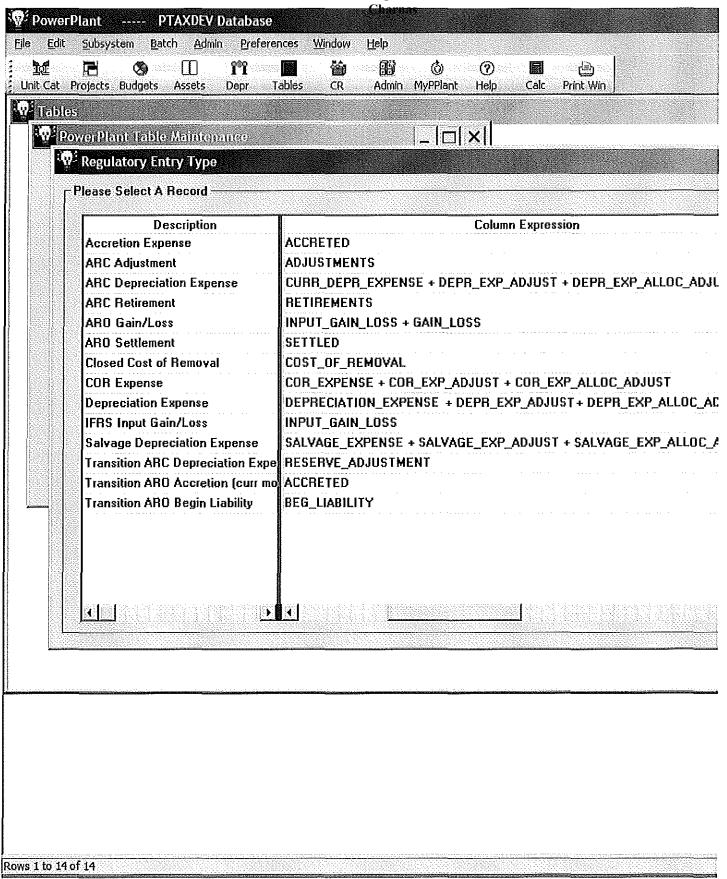
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1651 of 2028

Charnas

**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

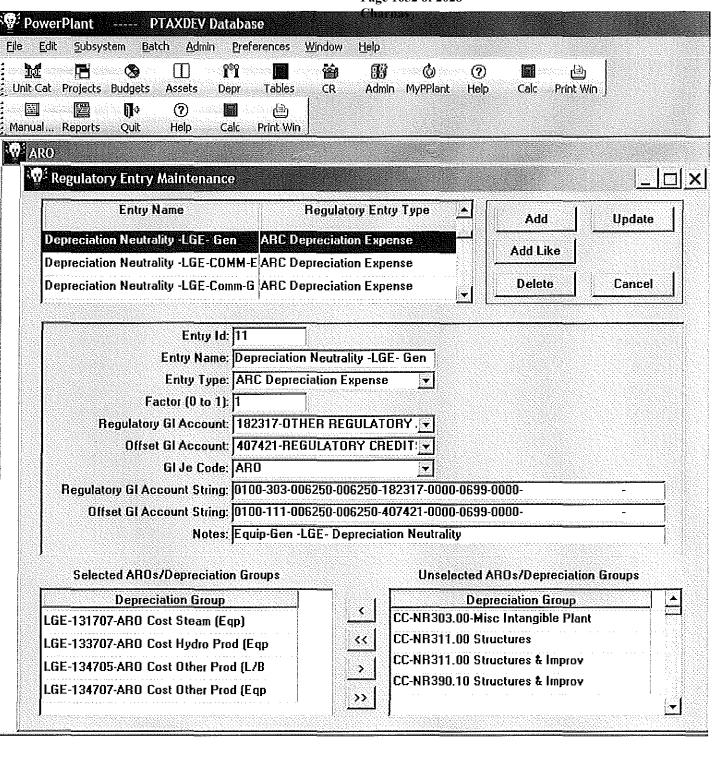
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

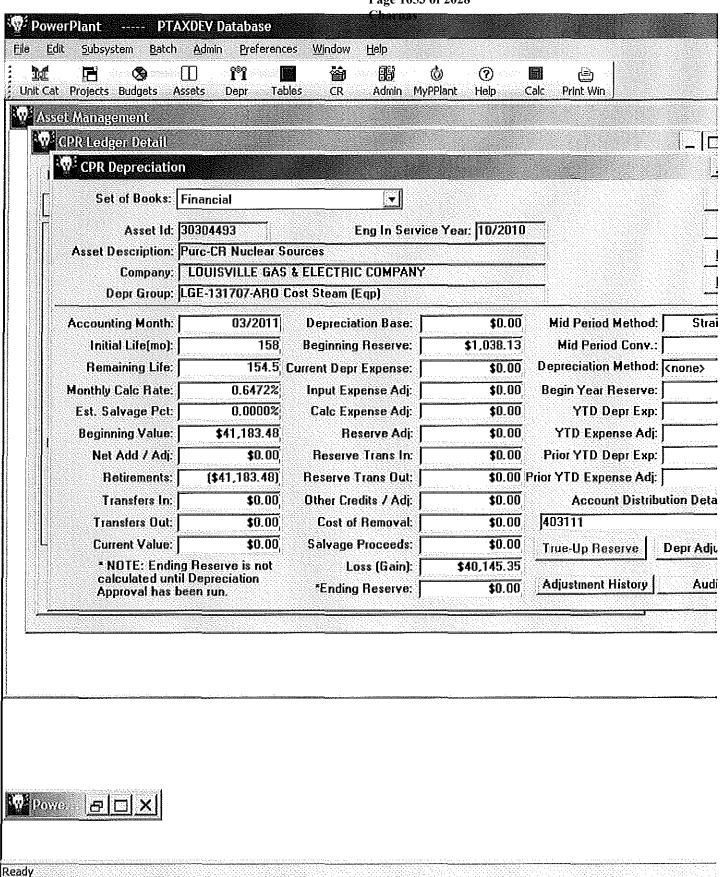
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1652 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1653 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1654 of 2028 Charnas

Thanks, Angela

**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

**Subject:** ARO Settlements

#### All:

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Attachment to Response to KU AG-1 Question No. 201 Page 1655 of 2028

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1656 of 2028

	idgets Assets Depr Tables	CR Admin	MyPPlant Help	Calc Print Win
ARO Details				
<b>.</b>	ARO Details	***************************************	Asset Id:	ARO Asset D
	Purc-CR Nuclear Sources		Description:	30304493 Purc-CR Nucle
Company:   ARO Type:	LOUISVILLE GAS & ELECTRIC CON Site	The second secon	Business Segm	
	Inactive Rate Type:	Standard 💌	Asset Gl Accour	Empression and the second second
	3/28/2011 Use Det. Rates		Utility Account:	E317.07-ARO C
	230012-ASSET RETIREMENT OF		Sub Account:	None
Accretion Acct:	411150-ACCRETION EXPENSE -		Retirement Unit:	ARO - CHILD
Gain Account:	421105-GAIN ON ARO SETTLEN	Book Summary	Property Group:	EON Default Pr
Loss Account:	421105-GAIN ON ARO SETTLEN	ARO <u>▼</u>	Asset Location:	Land and ARO
Long Description:	Purc-CR Nuclear Sources		Subledger Type:	ARO
Sottle Cost Elmet	0699: CORPORATE DEFAULT		End of Life;	12/2023
ARO Rollup:	Gen-Equip	2	Asset Dollars:	\$0.00
Ext ARO Code			Long Description	n: Purc-CR Nucle
and the state of the second se	erlying Related Locations elated Asset Locations			
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Attachment to Response to KU AG-1 Question No. 201 Page 1659 of 2028 Charnas

## Clark, Ed

From:

PowerPlant Support < support@pwrplan.com>

Sent:

Wednesday, March 30, 2011 4:30 PM

To:

Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc:

Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject:

RE: ARO Settlements

Angela,

I'll get connected to your database right now and investigate further and get back to you.

Sunjin Cone PowerPlant Support 770-937-3000

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Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

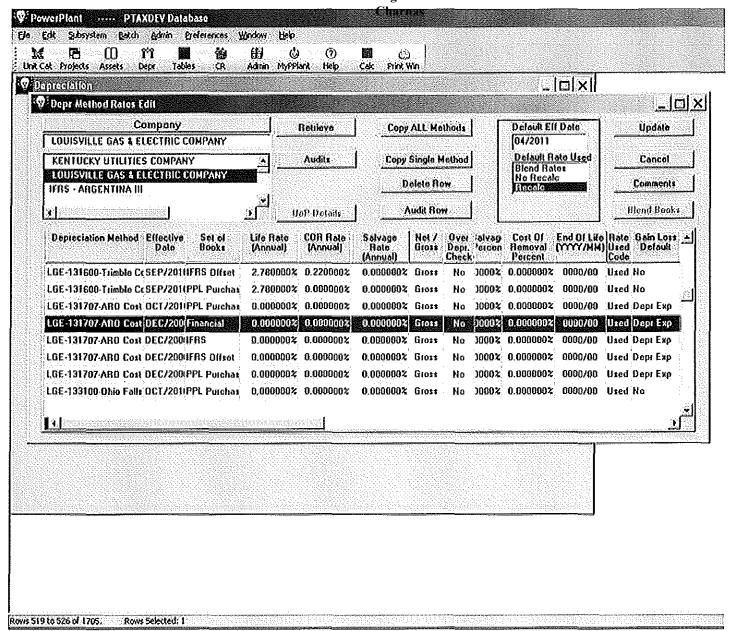
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**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



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To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1661 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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The New Address is:

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Thanks, Angela

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Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

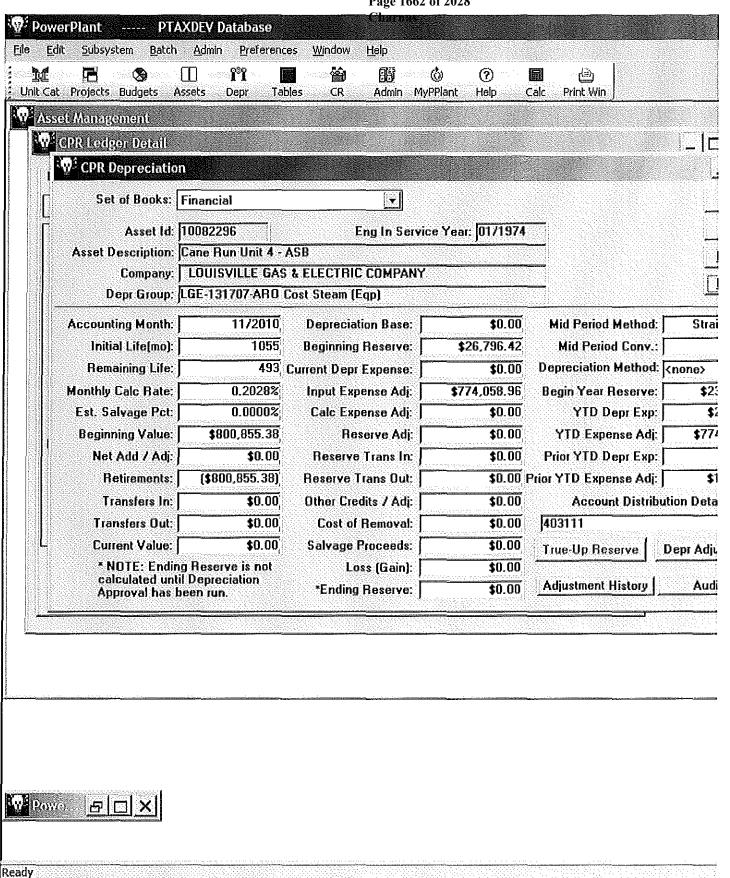
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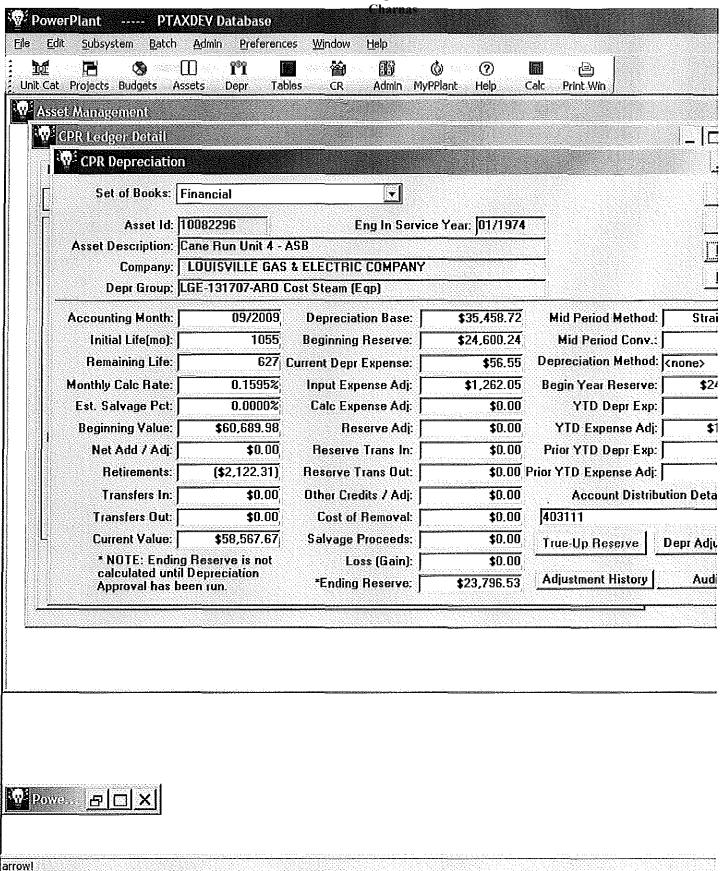
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I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1662 of 2028





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1664 of 2028

Charnas-

**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

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To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

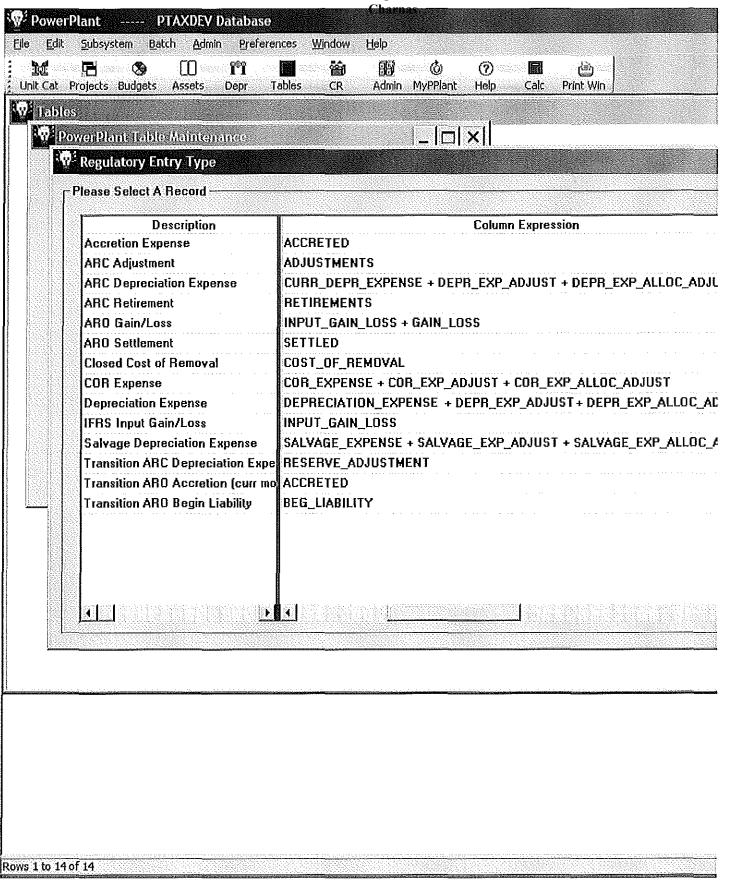
Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.

Attachment to Response to KU AG-1 Question No. 201 Page 1665 of 2028



Thanks, Angela

### Attachment to Response to KU AG-1 Question No. 201 Page 1666 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

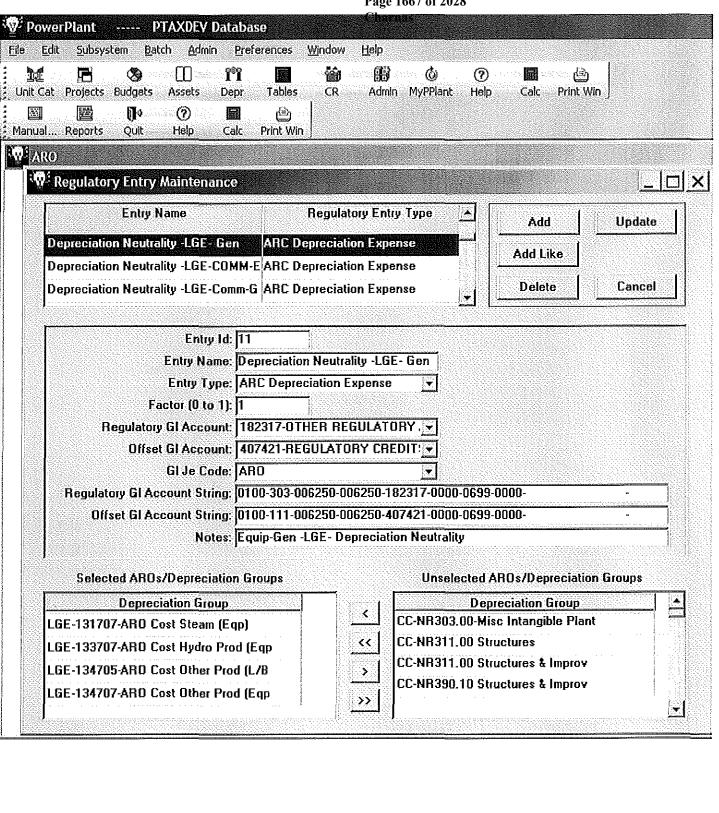
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

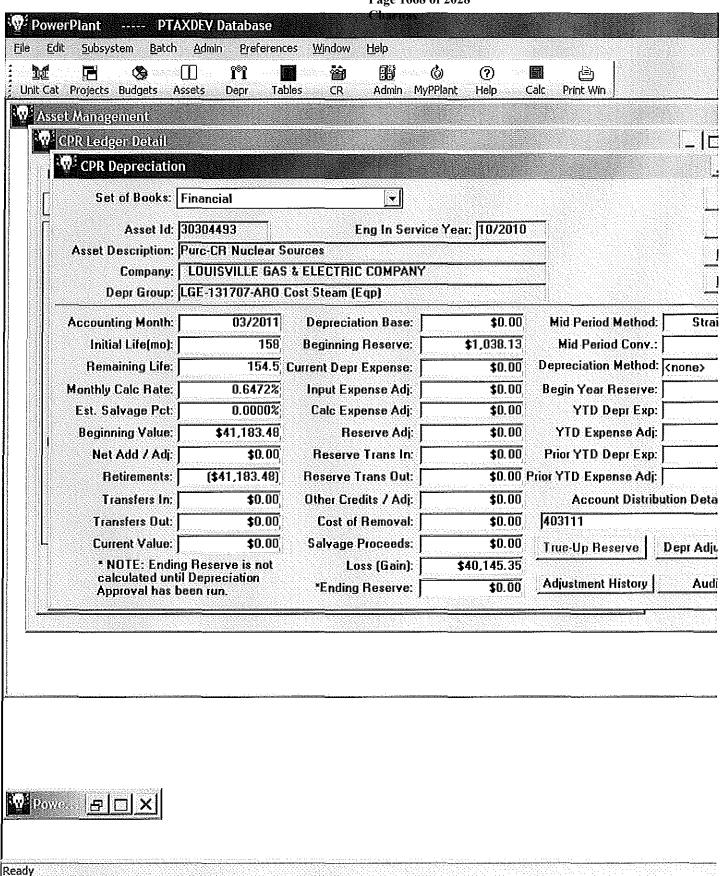
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1667 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1668 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1669 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

 $\begin{array}{c} Attachment \ to \ Response \ to \ KU \ AG-1 \ Question \ No. \ 201 \\ Page \ 1670 \ of \ 2028 \end{array}$ 

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

# $\begin{tabular}{lll} Attachment to Response to $KU$ AG-1 Question No. 201 \\ Page 1671 of 2028 \end{tabular}$

Description:  Company:  LOUISVILLE GAS & ELECTRIC COMPANY  ARO Type:  Site  ARC Auto Ret:  Inactive  Rate Type:  Standard  Status Date:  Liability Account:  J230012-ASSET RETIREMENT OF  Accretion Acct:  Gain Account:  Purc-CR Nucle  Business Segmer Electric  Asset GI Account:  Utility Account:  Sub Account:  None  Retirement Unit:  ARO - CHILD  Property Group:  EON Default Pr	ARO Details				
Company: LOUISVILLE GAS & ELECTRIC COMPANY					ARO Asset De
ARO Type: Sife  ARC Auto Ret: no  Asset GI Account: 101 - Plant In Status Date: 3/28/2011  Use Det. Rates: no  Utility Account: E317.07-ARO C  Sub Account: 421105-ACCRETION EXPENSE -  Book Summary: Loss Account: 421105-GAIN ON ARO SETTLEN  ARO  Acset Location: Land and ARO  Settle Cost Elmnt: 0699: CORPORATE DEFAULT  ARO  Acset Description: Ext ARO Code  Underlying Related Locations  Business Segmer Electric  Asset GI Account: 101 - Plant In Status Description: Utility Account: E317.07-ARO C  Sub Account: None  Retirement Unit: ARO - CHILD  Property Group: EON Default Property Group: EON Default Property Group: EON Default Property Group: EON Default Property Group: Asset Location: Land and ARO  Subledger Type: ARO  End of Life: 12/2023  Asset Dollars: Asset Dollars: Asset Dollars: Long Description: Purc-CR Nucle					<u> </u>
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Status Date: 3/28/2011 Use Det. Rates: no Liability Account: 230012-ASSET RETIREMENT OF Accretion Acct: 411150-ACCRETION EXPENSE - Account: 421105-GAIN ON ARO SETTLEN Book Summary: Loss Account: 421105-GAIN ON ARO SETTLEN ARO Acceptable Aro Book Summary: Asset Location: Land and Aro Settle Cost Elmnt: 0699: CORPORATE DEFAULT ARO Code Underlying Related Locations  Underlying Related Locations		The state of the s			The second secon
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Long Description:   Purc-CR Nuclear Sources		The second secon	Retirement Unit; A Property Group; E ARO		
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ARO Rollup:  Ext ARO Code  Underlying Related Locations				End of Life:	12/2023
Ext ARO Code  Underlying Related Locations				Asset Dollars:	Purc-CR Nuclear relectric : 101 - Plant in Se E317.07-ARO Cos None ARO - CHILD EON Default Pro Land and AROs ARO 12/2023 \$0.00
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	LALANO COUC		Description  ARC Auto Ret: no  ARC Auto Ret: no  Citive Rate Type: Standard Asset Gl  W2011 Use Det. Rates: no  W1012-ASSET RETIREMENT OF ACCRETION EXPENSE - V  W105-GAIN ON ARO SETTLEN ARO  C-CR Nuclear Sources  9: CORPORATE DEFAULT  M-Equip  MR Belated Locations  Description  Business Asset Gl  Utility Acc  Sub Acco  Retireme  Property  Asset Lo  Subledge  End of Lift  Asset Do  Long Description  Long Description  Business  Asset Gl  Utility Acc  Sub Acco  Retireme  Property  Asset Lo  Subledge  End of Lift  Asset Do  Long Description  Business  Asset Gl  Utility Acc  Sub Acco  Retireme  Property  Asset Lo  Subledge  End of Lift  Asset Do  Long Description  Business  Asset Gl  Utility Acc  Sub Acco  Retireme  Property  Asset Lo  Subledge  End of Lift  Asset Do  Long Description  Business  Asset Gl  Utility Acc  Sub Acco  Retireme  Property  Asset Lo  Subledge		
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Attachment to Response to KU AG-1 Question No. 201 Page 1672 of 2028

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Attachment to Response to KU AG-1 Question No. 201 Page 1673 of 2028

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### Clark, Ed

From: Kinder, Debra

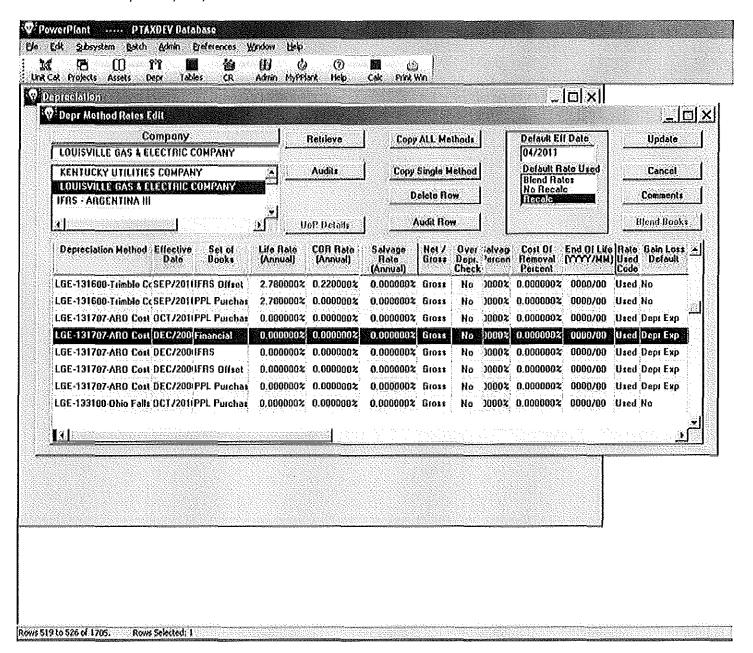
**Sent:** Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana

Subject: RE: ARO Settlements

The default already is "Depr Exp":



From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Attachment to Response to KU AG-1 Question No. 201 Page 1675 of 2028 Charnas

Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

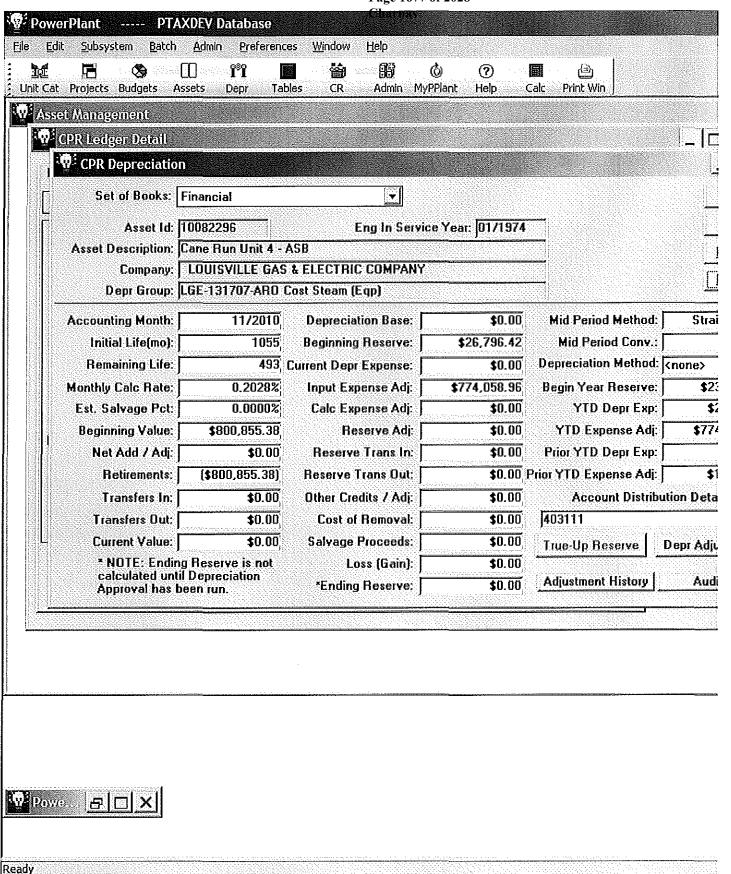
On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

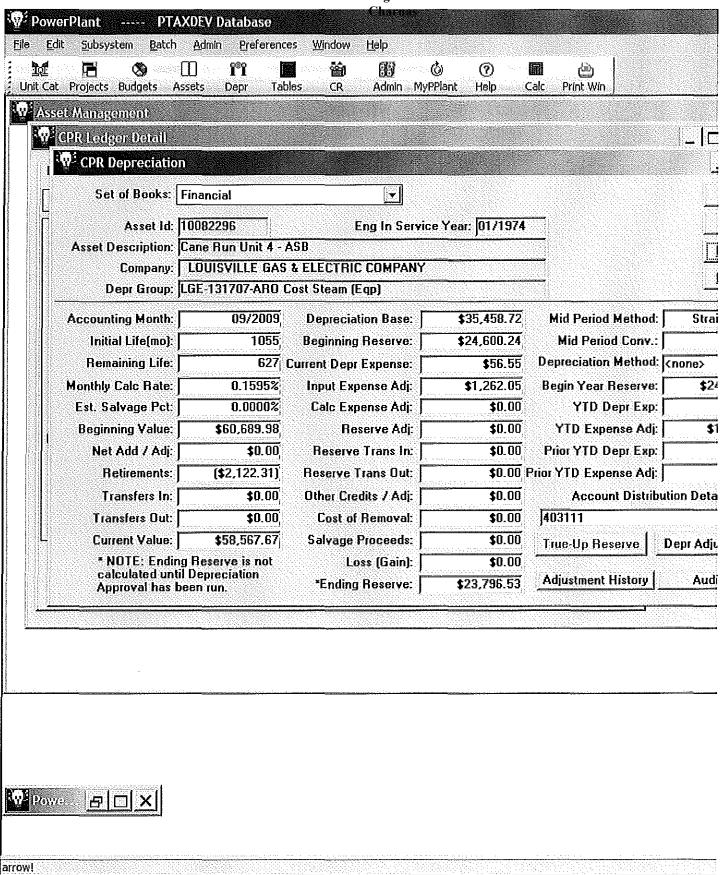
# Attachment to Response to KU AG-1 Question No. 201 Page 1676 of 2028

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1677 of 2028





Thanks, Angela

## Attachment to Response to KU AG-1 Question No. 201 Page 1679 of 2028

Charnas-

**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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The New Address is:

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

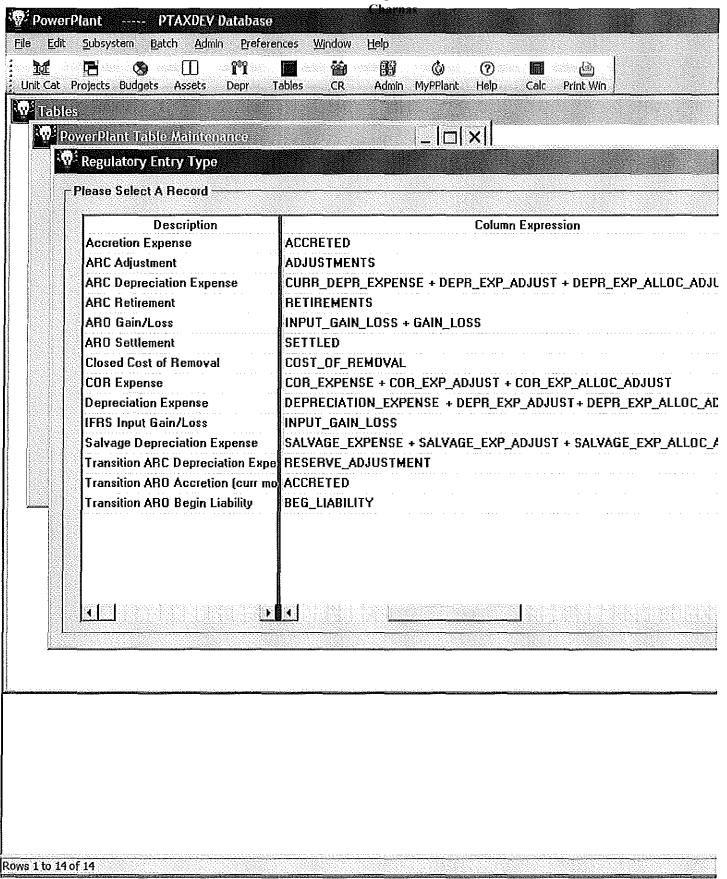
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

## Attachment to Response to KU AG-1 Question No. 201 Page 1681 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

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Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

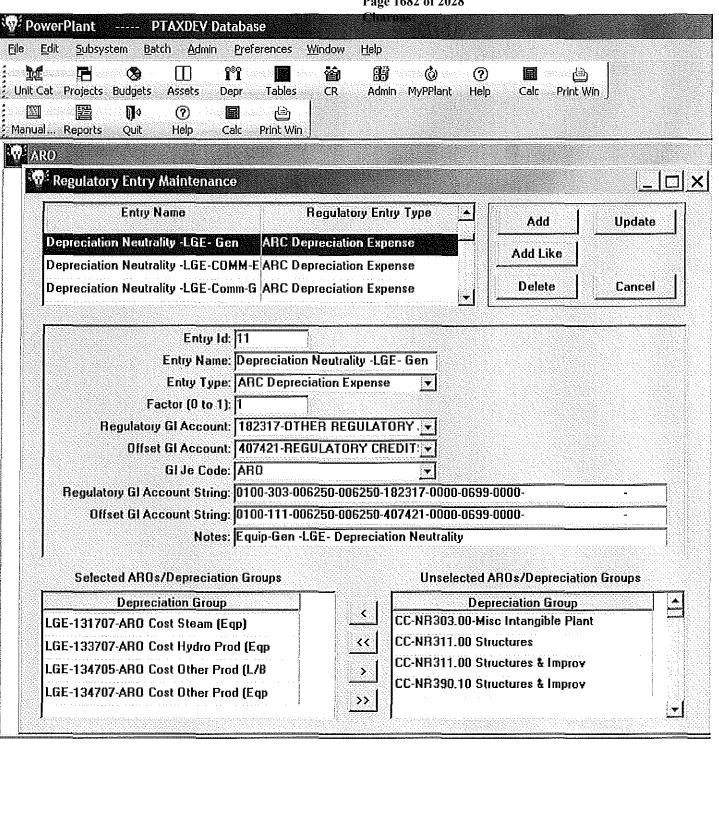
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

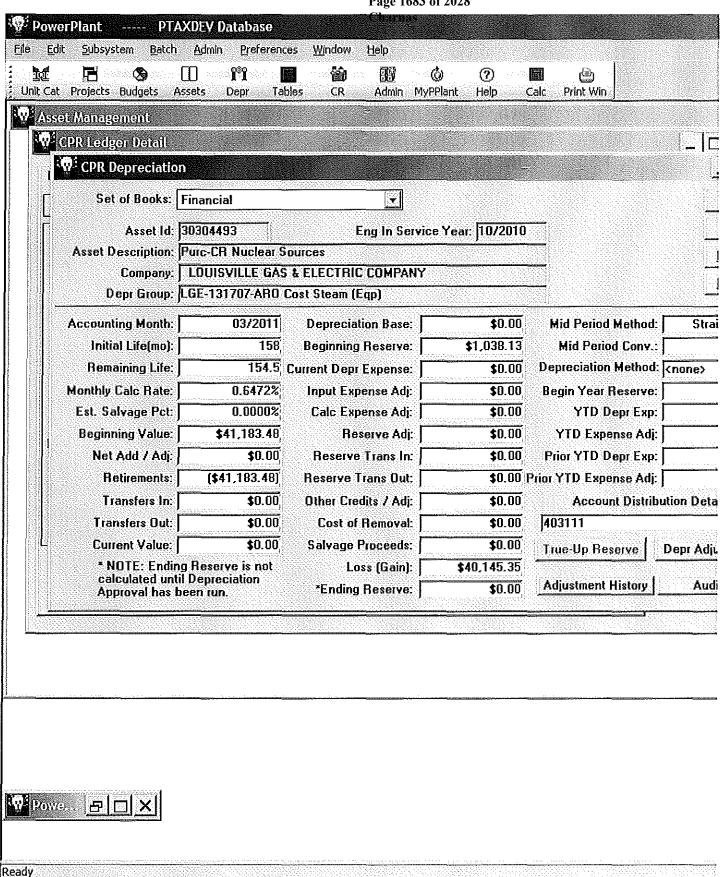
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Attachment to Response to KU AG-1 Question No. 201 Page 1682 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1683 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1684 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

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- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1685 of 2028

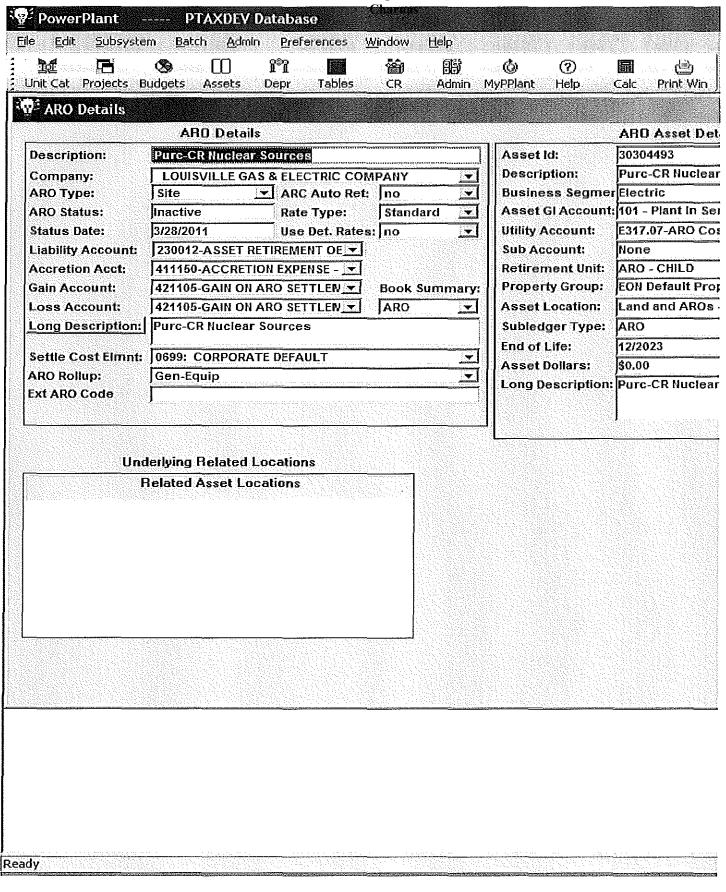
still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1686 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1687 of 2028

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#### Attachment to Response to KU AG-1 Question No. 201 Page 1689 of 2028 Charnas

### Clark, Ed

From:

Jim Ogilvie <jogilvie@pwrplan.com>

Sent:

Wednesday, March 30, 2011 9:19 AM

To:

Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc:

Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

RE: ARO Settlements

Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Attachment to Response to KU AG-1 Question No. 201 Page 1690 of 2028 Charnas

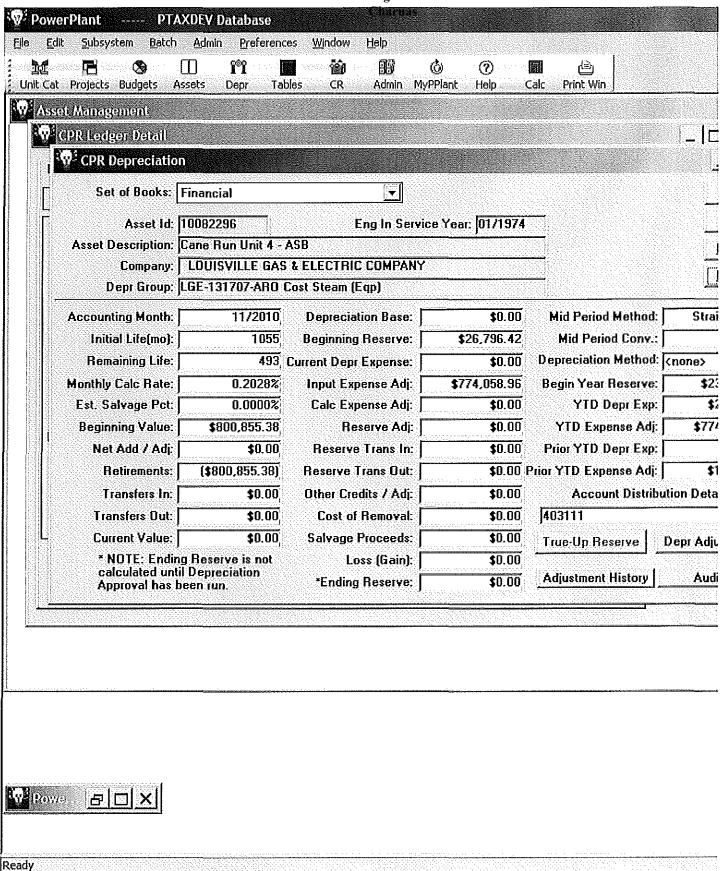
Jim,

OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?



			Financial .	Set of Books:
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	- 15.0.05.05.05			Asset Description:
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iation Method	\$56.55 Depreciatio	urrent Depr Expense:	627	Remaining Life:
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Thanks, Angela

### Attachment to Response to KU AG-1 Question No. 201 Page 1693 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela,Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

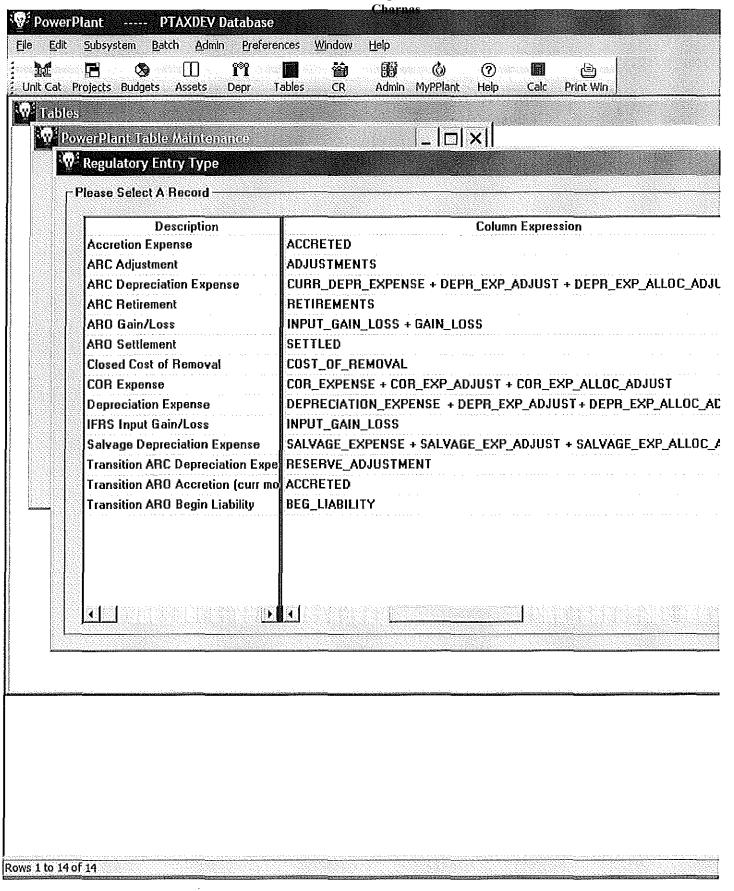
Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.

Attachment to Response to KU AG-1 Question No. 201 Page 1694 of 2028



Thanks, Angela

### Attachment to Response to KU AG-1 Question No. 201 Page 1695 of 2028 Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

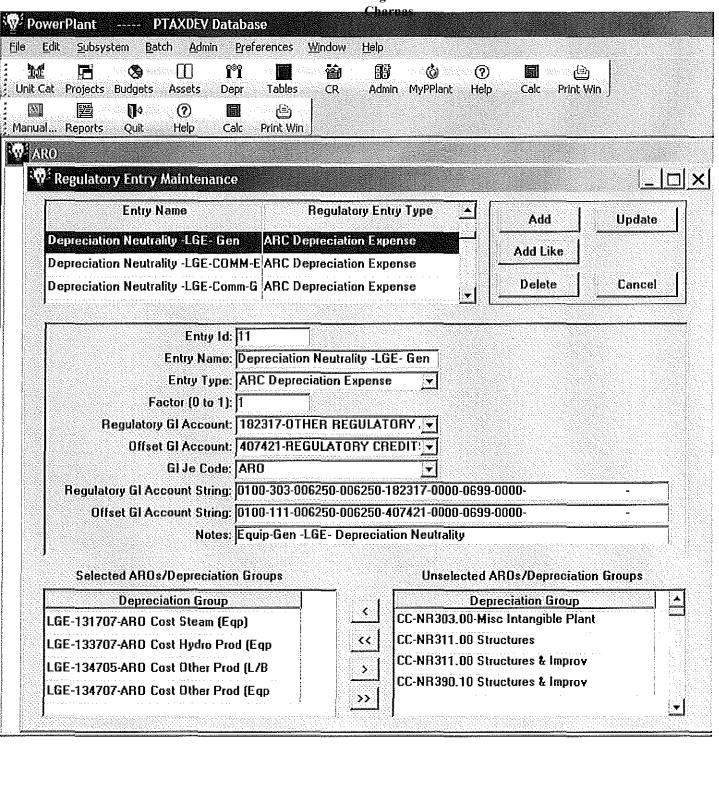
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

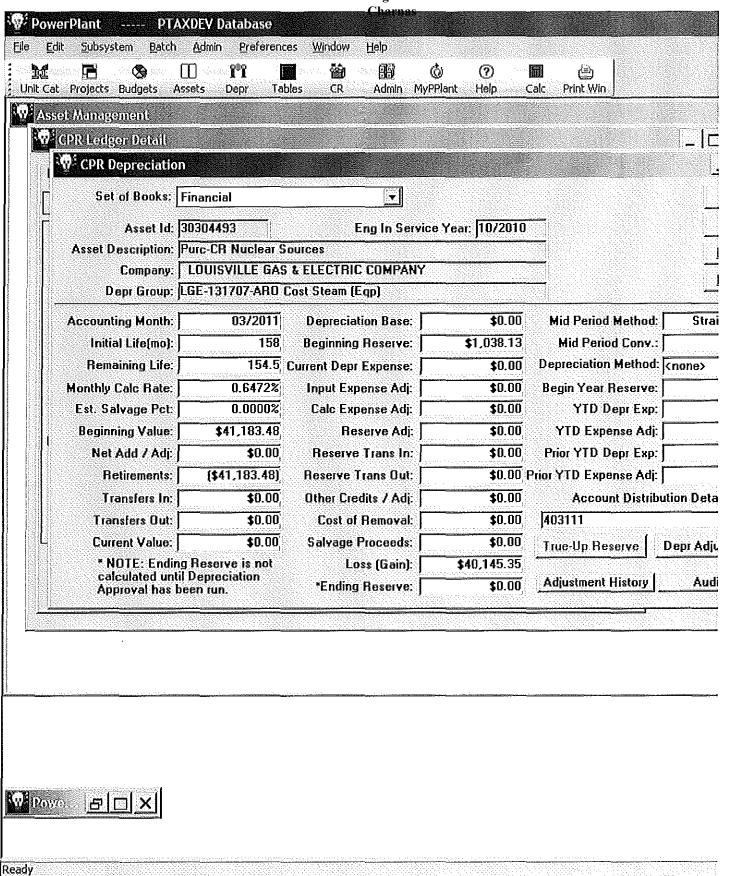
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1696 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1697 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1698 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

 $\begin{array}{c} Attachment \ to \ Response \ to \ KU \ AG-1 \ Question \ No. \ 201 \\ Page \ 1699 \ of \ 2028 \end{array}$ 

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<lgetestmarch.xlsx>>

<<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201
Page 1700 of 2028
Charnes

ARO Details	udgets Assets Depr Tables	CR A	dmin 1	riyPPlant	Help	Calc P	rint Win
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ARO Type:	Site  ARC Auto Re	t: Ino		Busine	ss Segme	Electric	
ARO Status:	Inactive Rate Type:	Standard		Asset G	il Account	101 - Pl	ant In S
Status Date:	3/28/2011 Use Det. Rate	s: Jno	Ī	Utility A	ccount:	E317.07	ARO C
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Loss Account:	421105-GAIN ON ARO SETTLEN ▼	ARO			ocation:	Land ar	id AROs
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Attachment to Response to KU AG-1 Question No. 201
Page 1701 of 2028
Charnas

n for all E.ON U.S. e-mail addressès"häs"changed from @eon-us.com to @lge-ku.com. ddress book accordingly.
tained in this transmission is intended only for the person or entity to which it is directle It may contain material of confidential and/or private nature. Any review, mination or other use of, or taking of any action in reliance upon, this information by ther than the intended recipient is not allowed. If you received this message and the and therein by error, please contact the sender and delete the material from your/any
n for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. ddress book accordingly.
tained in this transmission is intended only for the person or entity to which it is directly to material of confidential and/or private nature. Any review, mination or other use of, or taking of any action in reliance upon, this information by her than the intended recipient is not allowed. If you received this message and the d therein by error, please contact the sender and delete the material from your/any
n for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Idress book accordingly.
tained in this transmission is intended only for the person or entity to which it is directly to material of confidential and/or private nature. Any review, mination or other use of, or taking of any action in reliance upon, this information by the intended recipient is not allowed. If you received this message and the d therein by error, please contact the sender and delete the material from your/any
n for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. ldress book accordingly.
mination or other use of, or taking of any action in reliance upon, this informal fer than the intended recipient is not allowed. If you received this message and d therein by error, please contact the sender and delete the material from your/ a for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-k

## Clark, Ed

From:

Richardson, Ralph

Sent:

Monday, April 04, 2011 8:47 AM

To:

Kinder, Debra

Cc:

Wacker, Diana; Crescente, Angela; Duce, John

Subject:

**RE: ARO Settlements** 

This has been ran in DEV.

From: Kinder, Debra

Sent: Monday, April 04, 2011 8:33 AM

To: Richardson, Ralph

**Cc:** Wacker, Diana; Crescente, Angela **Subject:** FW: ARO Settlements

Please run the script below in **DEV**.

From: Kinder, Debra

**Sent:** Thursday, March 31, 2011 2:16 PM **To:** Richardson, Ralph; Duce, John **Cc:** Crescente, Angela; Wacker, Diana **Subject:** FW: ARO Settlements

Please run the attached SQL in PP DEV.

Thanks

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Thursday, March 31, 2011 2:11 PM

To: PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

**PowerPlant Support** 

Please have the sql script below run to fix the effective dated rates problem described below.

770-937-3000

From: PowerPlant Support

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

FYI -

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

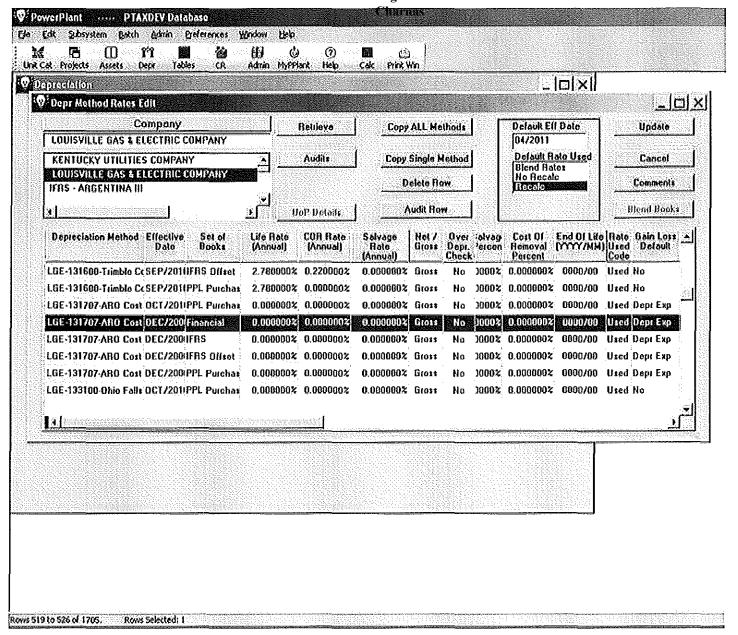
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

### Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1705 of 2028 Charnas

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Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

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Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

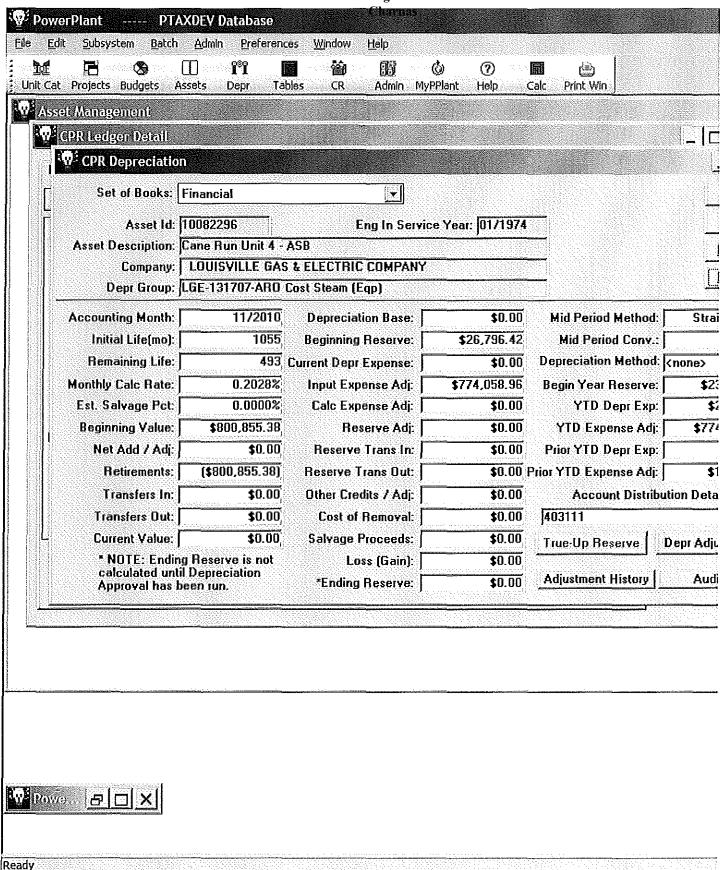
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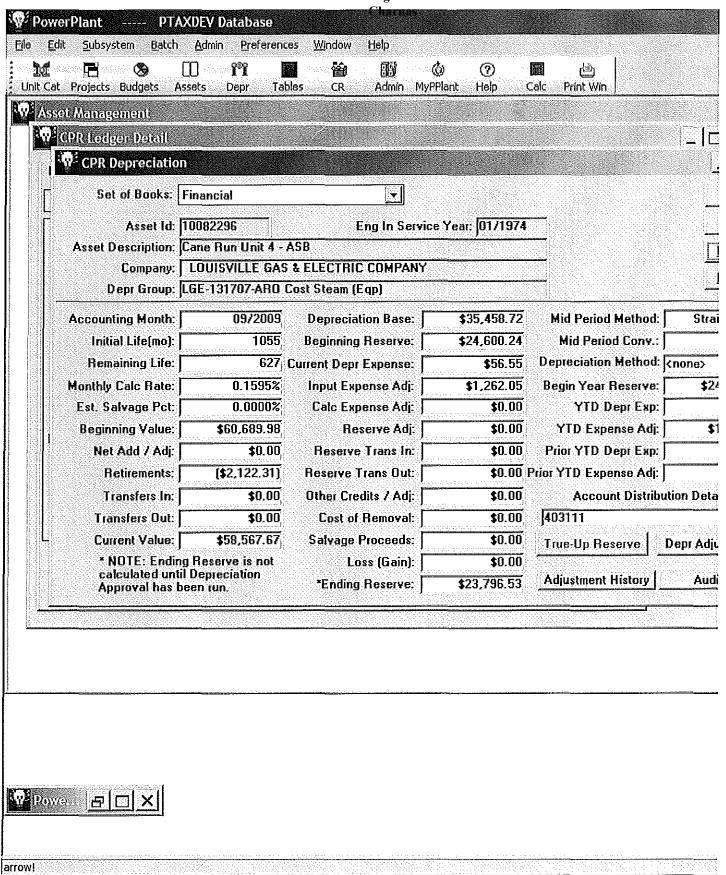
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I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1706 of 2028





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1708 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

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Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

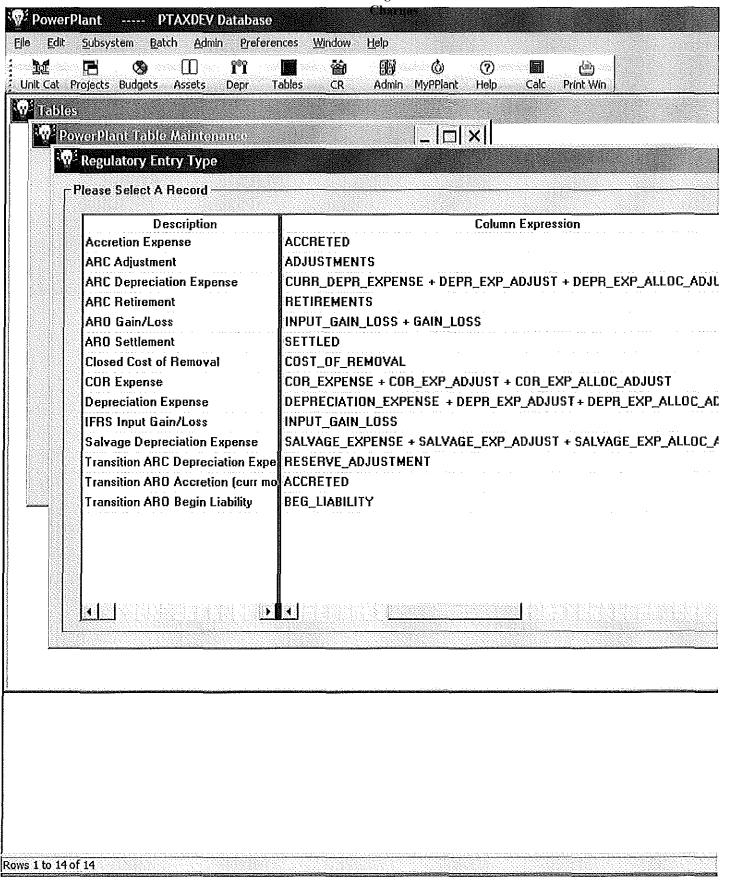
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1710 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
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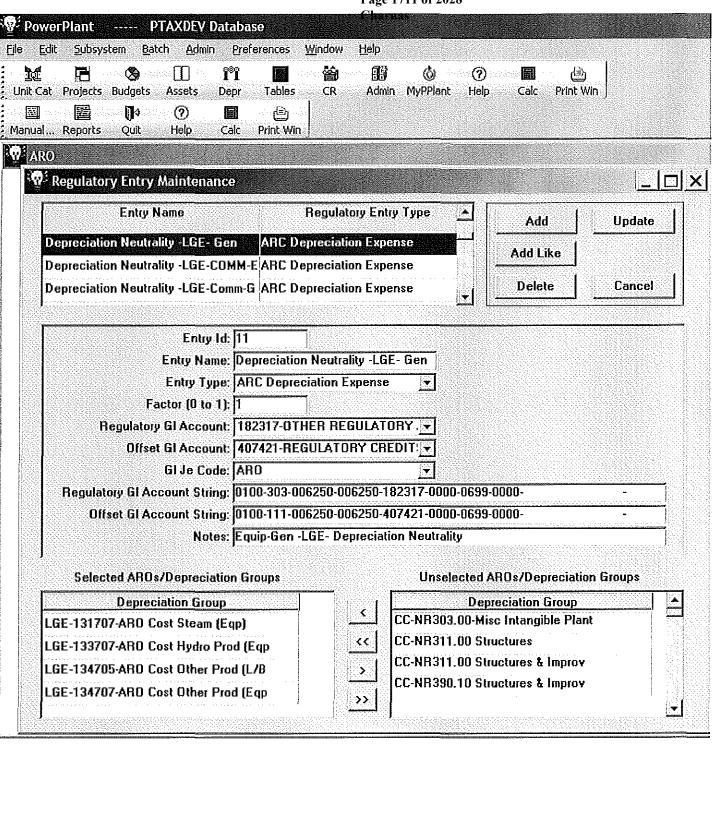
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

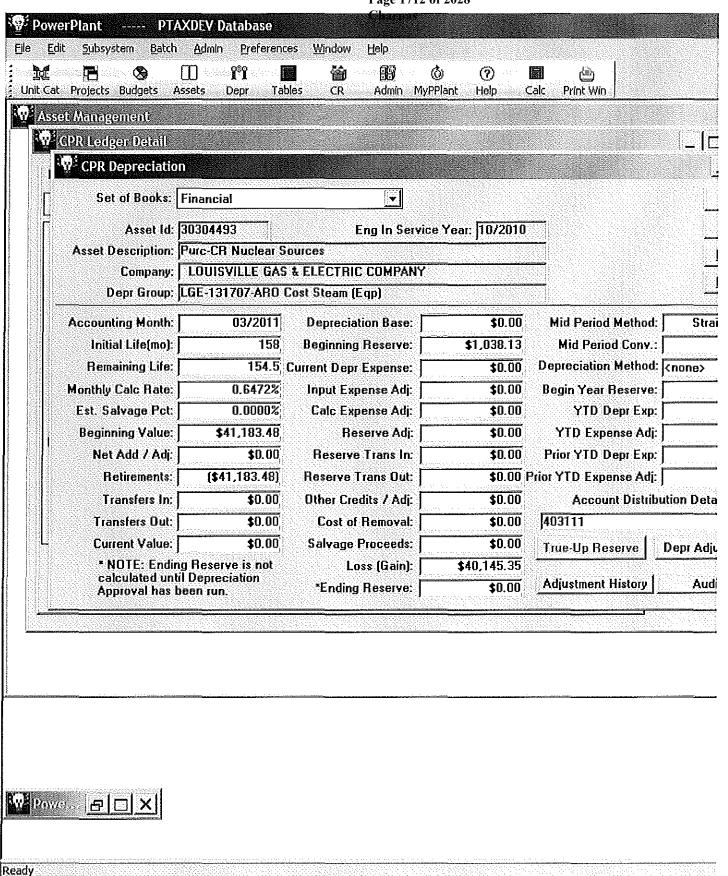
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Attachment to Response to KU AG-1 Question No. 201 Page 1711 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1712 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1713 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

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- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

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To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

 $\begin{array}{c} Attachment\ to\ Response\ to\ KU\ AG-1\ Question\ No.\ 201\\ Page\ 1714\ of\ 2028 \end{array}$ 

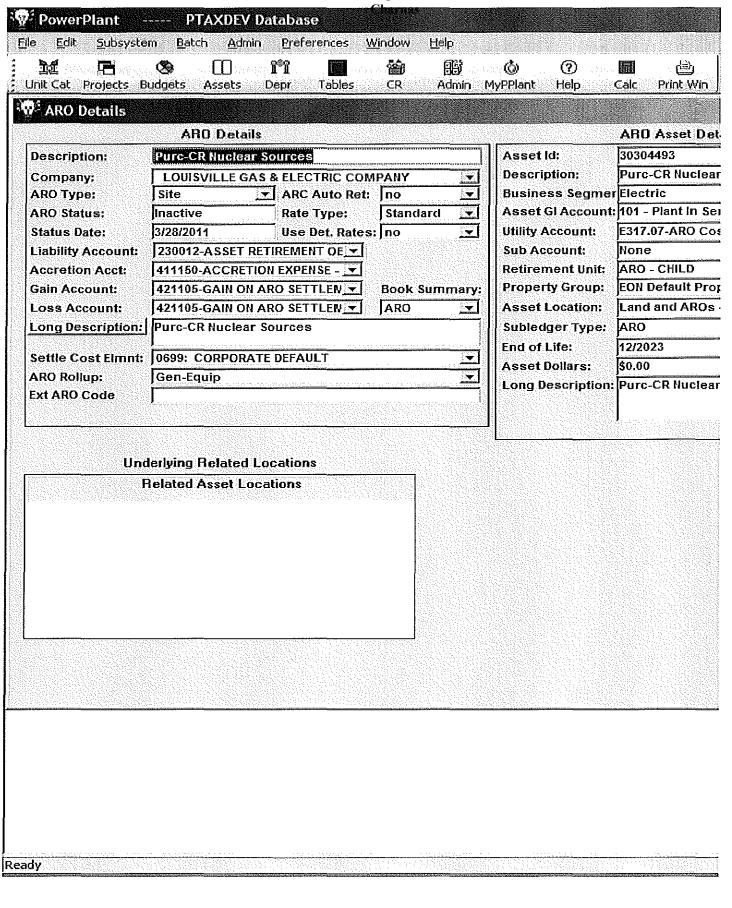
still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1715 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1716 of 2028

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Attachment to Response to KU AG-1 Question No. 201 Page 1717 of 2028

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## Clark, Ed

From:

Kinder, Debra

Sent:

Monday, April 04, 2011 8:33 AM

To:

Richardson, Ralph

Cc:

Wacker, Diana; Crescente, Angela

Subject:

FW: ARO Settlements

Please run the script below in **DEV**.

From: Kinder, Debra

Sent: Thursday, March 31, 2011 2:16 PM To: Richardson, Ralph; Duce, John Cc: Crescente, Angela; Wacker, Diana Subject: FW: ARO Settlements

Please run the attached SQL in PP DEV.

Thanks

**From:** PowerPlant Support [mailto:support@pwrplan.com]

Sent: Thursday, March 31, 2011 2:11 PM

To: PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Please have the sql script below run to fix the effective dated rates problem described below.

From: PowerPlant Support

PowerPlant Support 770-937-3000

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Attachment to Response to KU AG-1 Question No. 201 Page 1719 of 2028 Charnas

FYI-

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

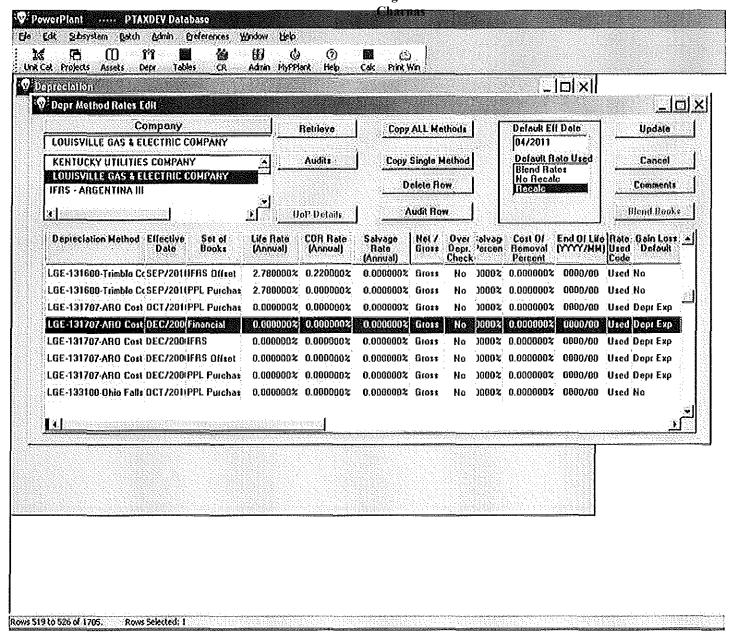
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

### Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1721 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

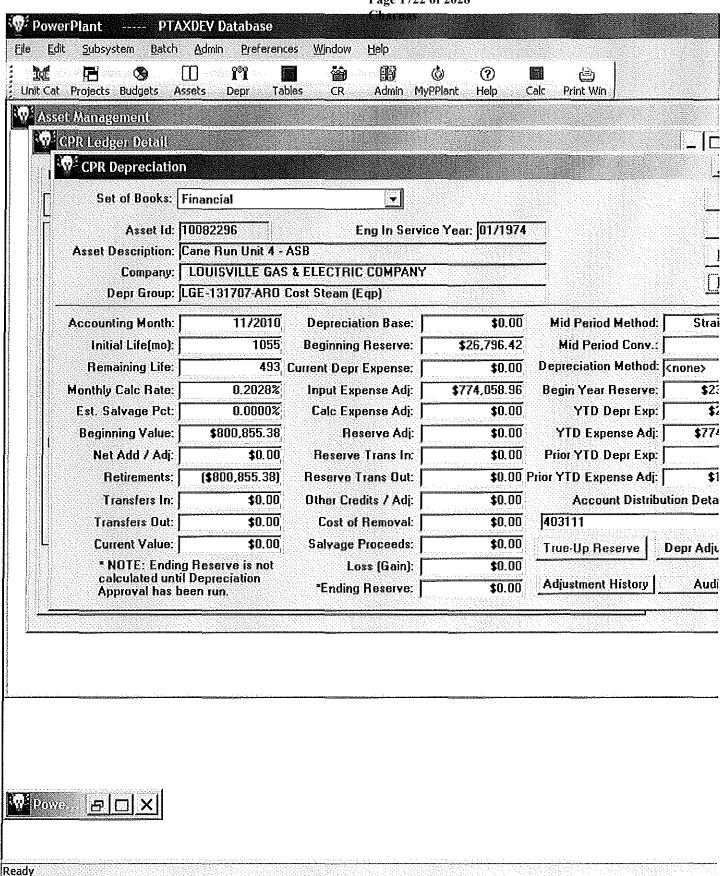
Jim,

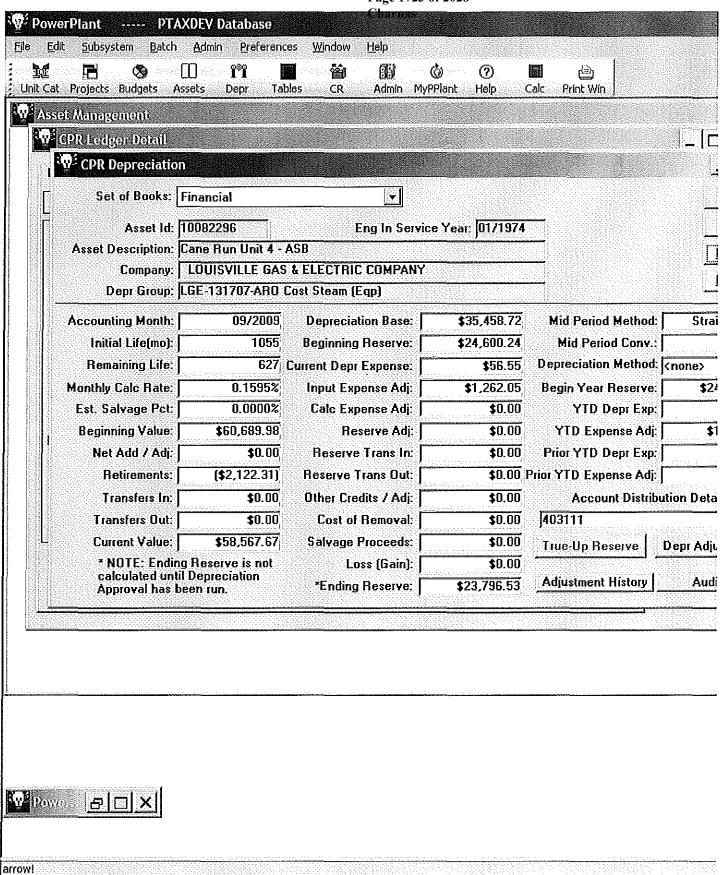
OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1724 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

**Sent:** Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahiby; Josh Hirschel; Joseph Holt

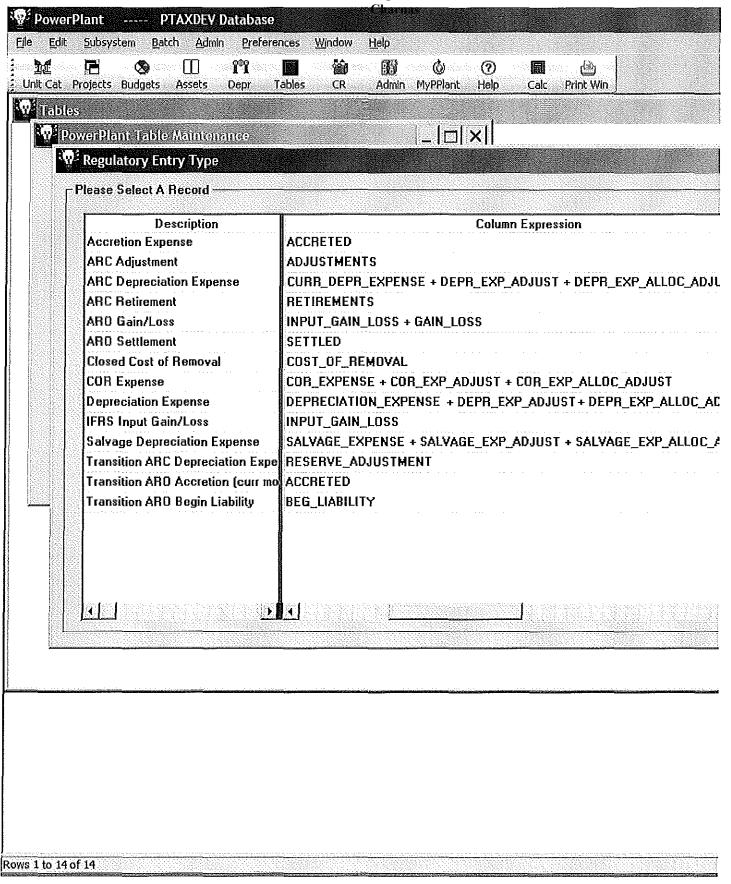
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1726 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

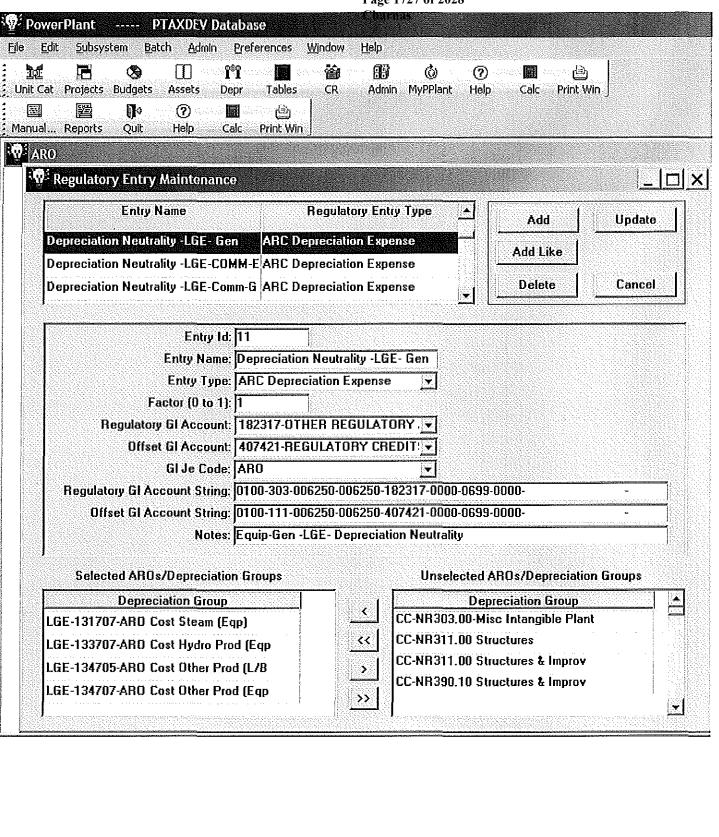
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

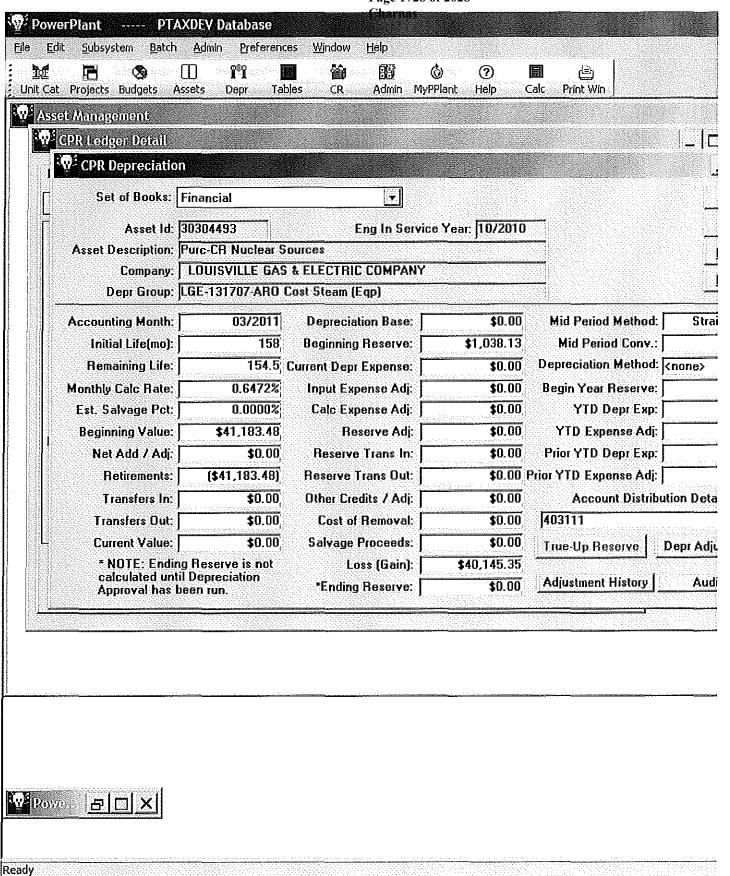
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1727 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1728 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1729 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

 $\begin{array}{c} Attachment \ to \ Response \ to \ KU \ AG-1 \ Question \ No. \ 201 \\ Page \ 1730 \ of \ 2028 \end{array}$ 

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

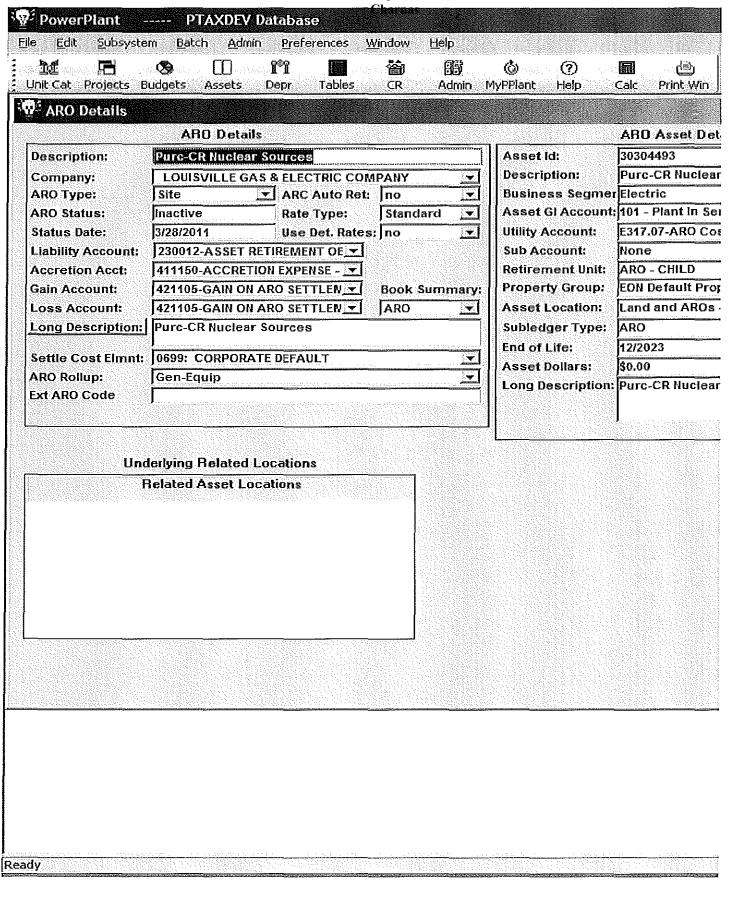
<<lgetestmarch.xlsx>>

<<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1731 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1732 of 2028

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Attachment to Response to KU AG-1 Question No. 201 Page 1733 of 2028

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## Clark, Ed

From:

Puckett, Paul

Sent:

Friday, April 01, 2011 9:26 AM

To:

Crescente, Angela

Subject:

RE: Mill Creek Landfill ARO Discussion

Angela,

Happy to help.

### W. Paul Puckett

Engineer - Environmental Affairs Department
LG&E and KU Energy (Louisville Gas & Electric, Kentucky Utilities, and Old Dominion Power)
220 West Main Street
P.O. Box 32010
Louisville, KY 40232
(502) 627-4659
(502) 217-4836 (facsimile)
(502) 648-7842 (mobile)

Please note the recent change in e-mail address: paul.puckett@lge-ku.com

From: Crescente, Angela

Sent: Friday, April 01, 2011 9:13 AM

To: Puckett, Paul

Subject: RE: Mill Creek Landfill ARO Discussion

Thanks Paul for sending this. I had plans to draft an email about our discussion yesterday, but you did a much better job than I would have, so thanks for doing that.

From: Puckett, Paul

Sent: Thursday, March 31, 2011 4:34 PM

To: Crescente, Angela; Love, K J; Pence, Mark; Rose, Bruce; Van Winkle, Don; Wacker, Diana

Cc: Winkler, Michael

Subject: Mill Creek Landfill ARO Discussion

#### To all,

Earlier today, we met at the Mill Creek site to discuss Accounting Retirement Obligations related to the landfill at the Mill Creek Station. After overview discussions and some back and forth to establish perspective, the discussions of substance were centered on determining the total landfill acreage, the active portions of the total acreage, and the retired portions of the landfill and the time periods (2003 and after) in which the retirements occurred. At the close of our discussions, the following information was understood by me to be the most important.

		<u>Acres</u>	
Currently ARO Area		142	
Active Area in excess of cu	irrent ARO	<u> 15</u>	(add)
Adjusted ARO Area		157	This will require an accounting adjustment by Angela (et al.)
Areas closed/retired:			
In 2008:	6.1 acres		
In 2009:	2.9 acres		
<u>In 2010:</u>	5.2 acres	157	
	14.2 acres	14	(subtract)

Attachment to Response to KU AG-1 Question No. 201 Page 1735 of 2028

Charnas

Areas currently active:

At/Near top 10 acres
At/Near top 8 acres
NE slope at levee 3 acres
Cell at former Drive In 15 acres
36 acres

36 (subtract)

143

143

107 End of meeting conclusion: 107 Acres of landfill were

### closed/retired prior to 2007.

After getting back to the office and researching this a bit more, it appears that there was a slight error in the course of our discussions. We inadvertently referenced Landfill Site B (within the railroad loop) as being approximately 75-85 acres and Landfill Site A as being approximately 50 acres. The acreages should have been reversed; that is to say Landfill Site A is the larger site and Landfill Site B (within the railroad loop) is the smaller site.

Feel free to contact me if you want to discuss this further or if you have any questions.

#### W. Paul Puckett

Engineer - Environmental Affairs Department LG&E and KU Energy (Louisville Gas & Electric, Kentucky Utilities, and Old Dominion Power) 220 West Main Street P.O. Box 32010 Louisville, KY 40232 (502) 627-4659 (502) 217-4836 (facsimile) (502) 648-7842 (mobile)

Please note the recent change in e-mail address: paul.puckett@lge-ku.com

### Clark, Ed

From:

Puckett, Paul

Sent:

Thursday, March 31, 2011 4:34 PM

To:

Crescente, Angela; Love, K J; Pence, Mark; Rose, Bruce; Van Winkle, Don; Wacker, Diana

Cc:

Winkler, Michael

Subject:

Mill Creek Landfill ARO Discussion

### To all,

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Adjusted ARO Area		157	This will require an accounting adjustment by Angela (et al.)
Areas closed/retired:			
in 2008:	6.1 acres		
In 2009:	2.9 acres		
<u>In 2010:</u>	5.2 acres	157	
	14.2 acres	<u> 14</u>	(subtract)
		143	
Areas currently active:			
At/Near top	10 acres		
At/Near top	8 acres		
NE slope at levee	3 acres		
Cell at former Drive In	15 acres	143	
	36 acres	<u> 36</u>	(subtract)
		107	End of meeting conclusion: 107 Acres of landfill were

### closed/retired prior to 2007.

After getting back to the office and researching this a bit more, it appears that there was a slight error in the course of our discussions. We inadvertently referenced Landfill Site B (within the railroad loop) as being approximately 75-85 acres and Landfill Site A as being approximately 50 acres. The acreages should have been reversed; that is to say Landfill Site A is the larger site and Landfill Site B (within the railroad loop) is the smaller site.

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#### W. Paul Puckett

Engineer - Environmental Affairs Department LG&E and KU Energy (Louisville Gas & Electric, Kentucky Utilities, and Old Dominion Power) 220 West Main Street P.O. Box 32010 Louisville, KY 40232 (502) 627-4659 (502) 217-4836 (facsimile) (502) 648-7842 (mobile)

Please note the recent change in e-mail address; paul.puckett@lge-ku.com

## Clark, Ed

From: Richardson, Ralph

Sent: Thursday, March 31, 2011 3:03 PM

To: Kinder, Debra; Duce, John

Cc: Crescente, Angela; Wacker, Diana

Subject: RE: ARO Settlements

I'll run this in DEV.

```
The code should be updated to be (see below). It updated 742 rows.

update pwrplant.depr_method_rates z

set effective_date =
{
    select max(effective_date)
    from pwrplant.depr_method_rates
    where set of books_id <> 5
        and to_char(effective_date,'yyyy') <2011
        and depr_method_id = z.depr_method_id
        )

where set_of_books_id = 5

and effective_date = to_date('201010', 'yyyymm');

Commit;
```

From: Kinder, Debra

Sent: Thursday, March 31, 2011 2:16 PM To: Richardson, Ralph; Duce, John Cc: Crescente, Angela; Wacker, Diana Subject: FW: ARO Settlements

Please run the attached SQL in PP DEV.

**Thanks** 

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Thursday, March 31, 2011 2:11 PM

To: PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Please have the sql script below run to fix the effective dated rates problem described below.

Attachment to Response to KU AG-1 Question No. 201 Page 1738 of 2028 Charnas

And effective\_date = to\_date('201010', 'yyyymm').

Commit;

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

FYI -

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

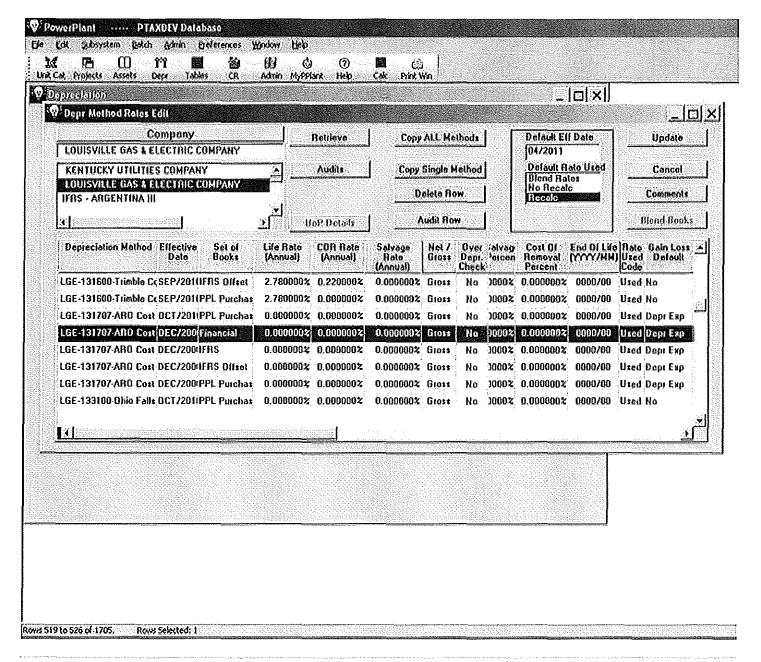
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

### Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1740 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

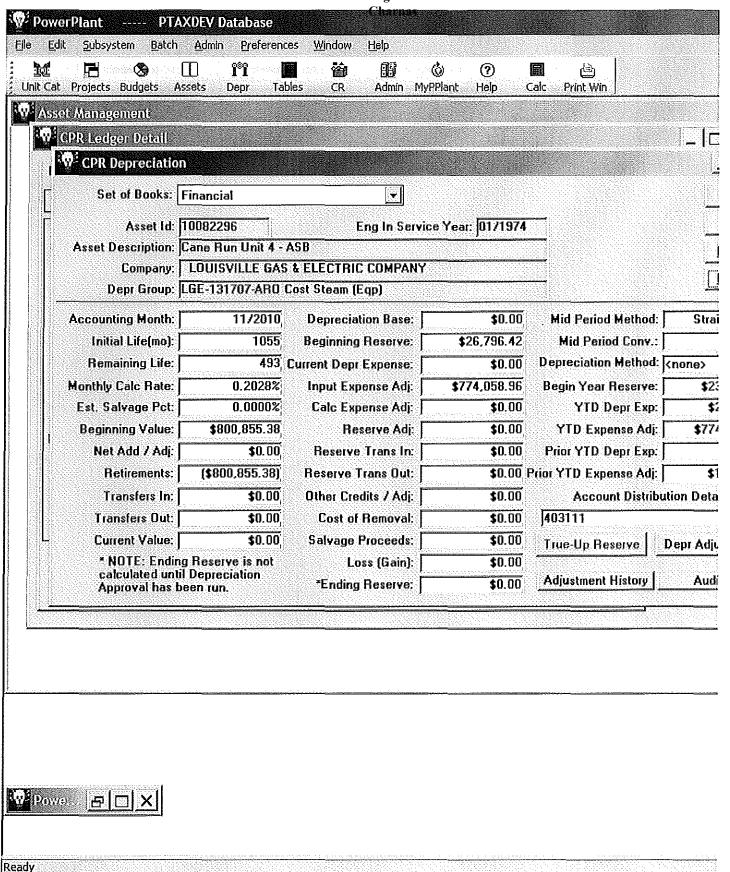
Jim,

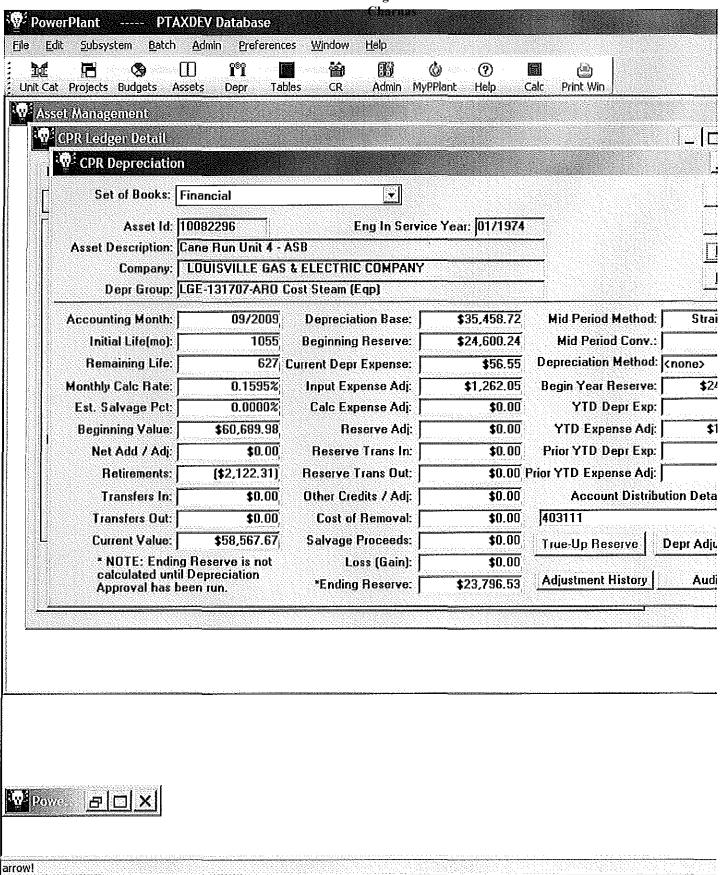
OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1743 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

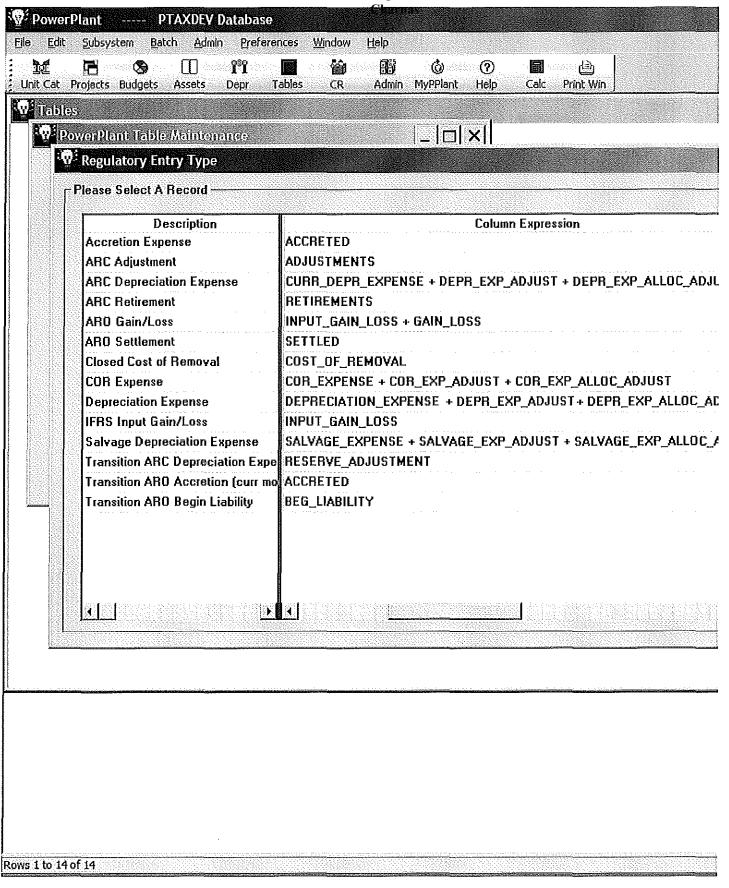
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1745 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

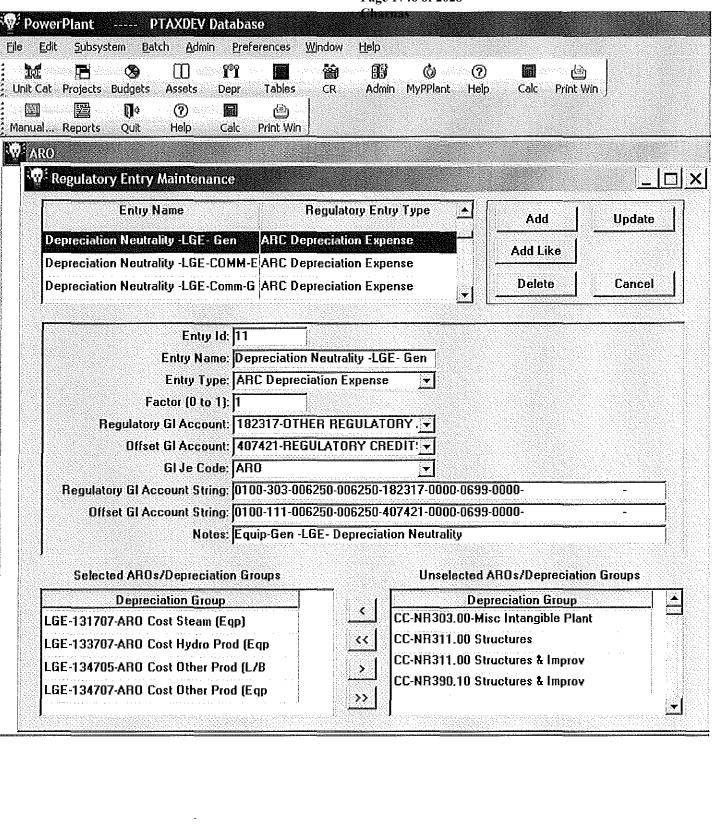
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

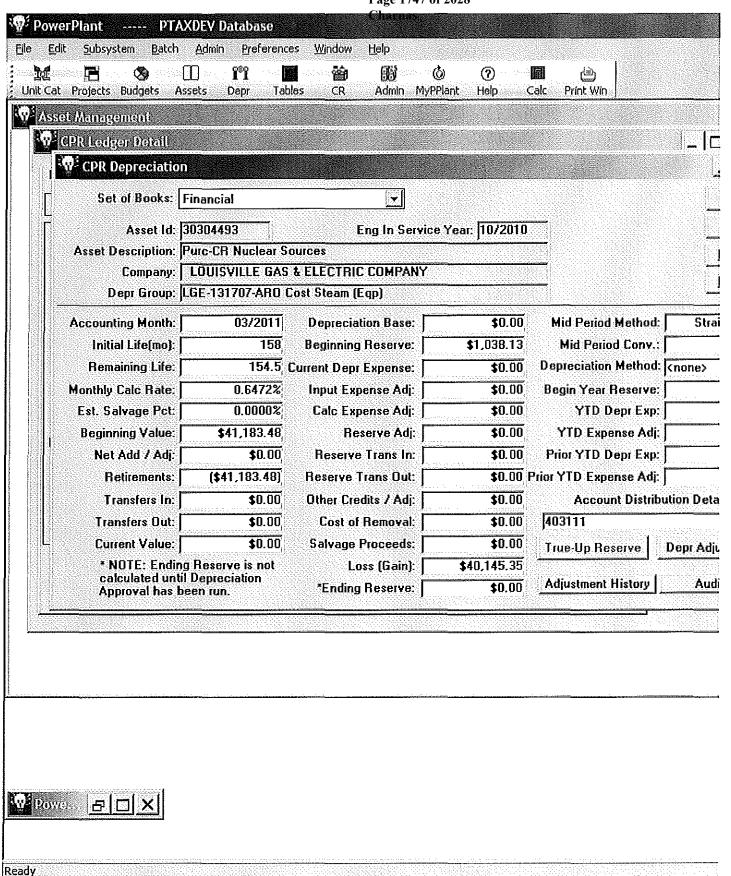
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1746 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1747 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1748 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahiby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1749 of 2028

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1750 of 2028

Jnit Cat Projects Bu S ARO Details	idgets Assets Depr Tables	CR Ac	dmin N	AyPPlant Help	Calc Print Win
	ARO Details				ARO Asset D
	Purc-CR Nuclear Sources			Asset Id:	30304493
Company:	LOUISVILLE GAS & ELECTRIC COM	The second secon		Description:	Purc-CR Nucle
ARO Type:	Site  ARC Auto Ret:	no		Business Segme Asset GI Account	the state of the s
	Inactive Rate Type: 3/28/2011 Use Det. Rates	Standard		Utility Account:	E317.07-ARO C
	230012-ASSET RETIREMENT OF	: ) 110		Sub Account:	None
	411150-ACCRETION EXPENSE - 🔻			Retirement Unit:	ARO - CHILD
Gain Account:	421105-GAIN ON ARO SETTLEN	Book Sumr		Property Group:	EON Default Pr
Loss Account:	421105-GAIN ON ARO SETTLEN T	ARO	Tillery.	Asset Location:	Land and ARO
	Purc-CR Nuclear Sources	JARO			1
cong been blom	t alo on Hacioal coaleca		131	Subledger Type:	
				Subledger Type:	ARO 12/2023
Settle Cost Elmnt:	0699: CORPORATE DEFAULT			End of Life:	12/2023
ARO Rollup: Ext ARO Code Und					12/2023 \$0.00
ARO Rollup: Ext ARO Code Und	0699: CORPORATE DEFAULT Gen-Equip srlying Related Locations			End of Life: Asset Dollars:	12/2023 \$0.00
ARO Rollup: Ext ARO Code Und	0699: CORPORATE DEFAULT Gen-Equip srlying Related Locations			End of Life: Asset Dollars:	12/2023 \$0.00
ARO Rollup: Ext ARO Code Und	0699: CORPORATE DEFAULT Gen-Equip srlying Related Locations			End of Life: Asset Dollars:	12/2023 \$0.00

Attachment to Response to KU AG-1 Question No. 201 Page 1751 of 2028

NOTE: The extension for all E.ON U.S. e-mail addresses "htts changed from @e. Please update your address book accordingly.	on-us.com to (Wige-ku.com.
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NOTE: The extension for all E,ON U.S. e-mail addresses has changed from @ed Please update your address book accordingly.	on-us.com to @lge-ku.com.
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Attachment to Response to KU AG-1 Question No. 201 Page 1752 of 2028

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NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

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### Clark, Ed

From:

Kinder, Debra

Sent: To:

Cc:

Thursday, March 31, 2011 2:16 PM Richardson, Ralph; Duce, John Crescente, Angela; Wacker, Diana

Subject:

FW: ARO Settlements

Please run the attached SQL in PP DEV.

**Thanks** 

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Thursday, March 31, 2011 2:11 PM

To: PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Please have the sql script below run to fix the effective dated rates problem described below.

From: PowerPlant Support

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

FYI -

Sunjin Cone

PowerPlant Support 770-937-3000

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Attachment to Response to KU AG-1 Question No. 201 Page 1754 of 2028 Charnas

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

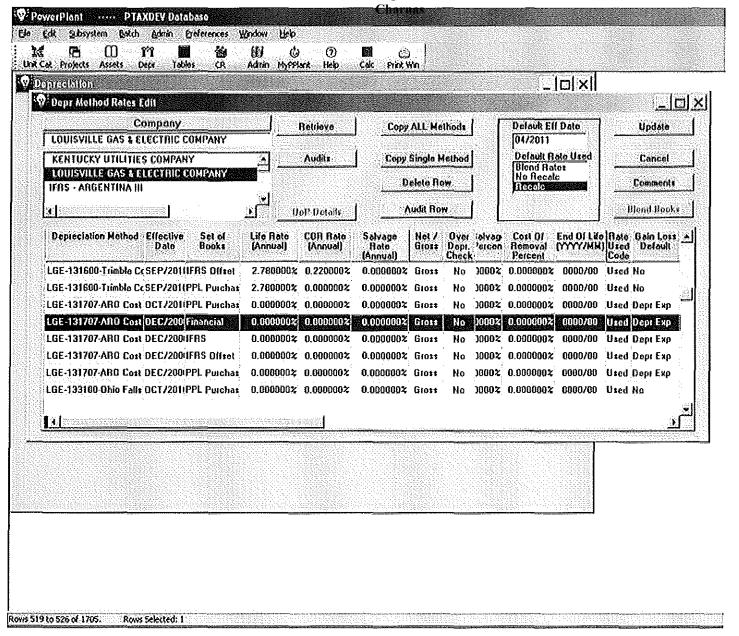
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1756 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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The New Address is:

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

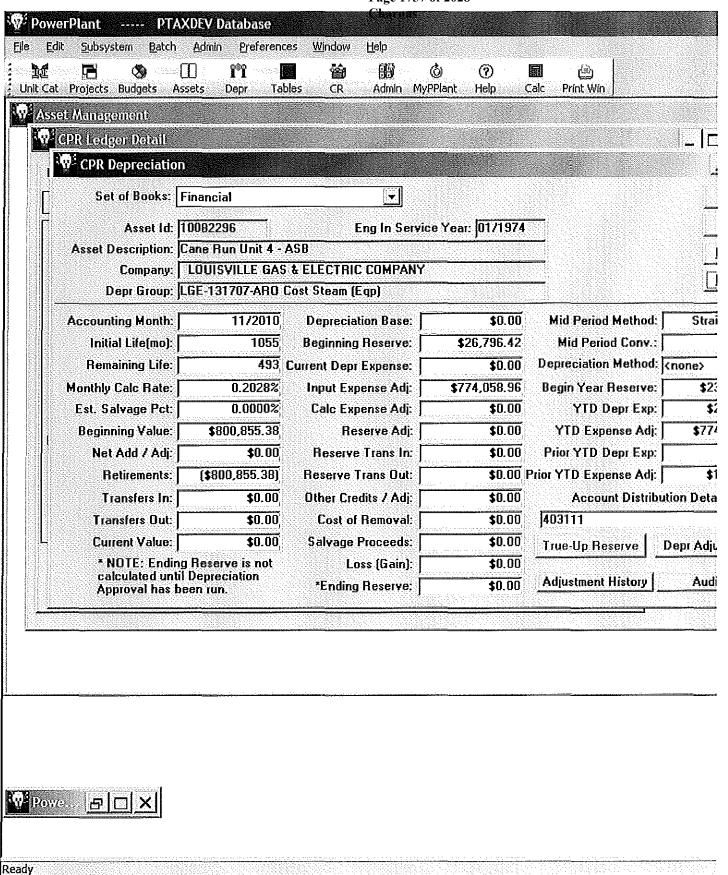
OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

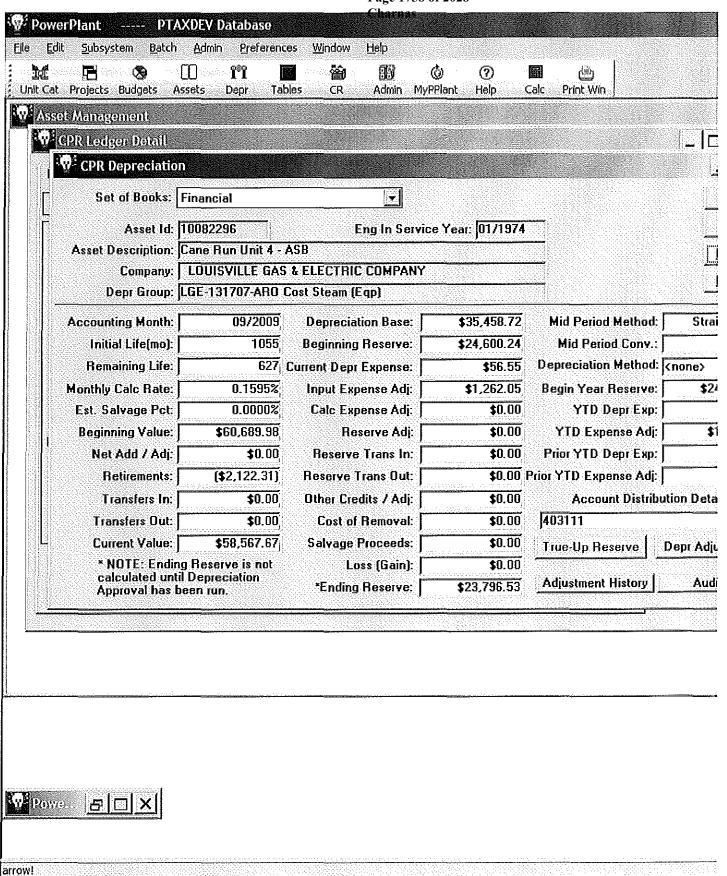
On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1757 of 2028





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1759 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

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**Sent:** Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

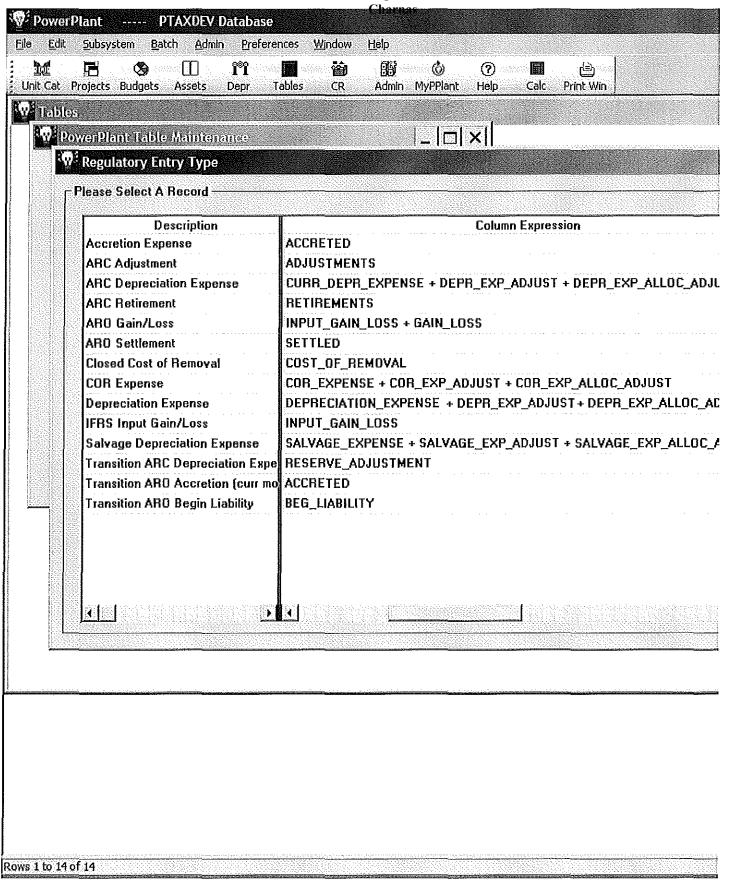
Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.

Attachment to Response to KU AG-1 Question No. 201 Page 1760 of 2028



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1761 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

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Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

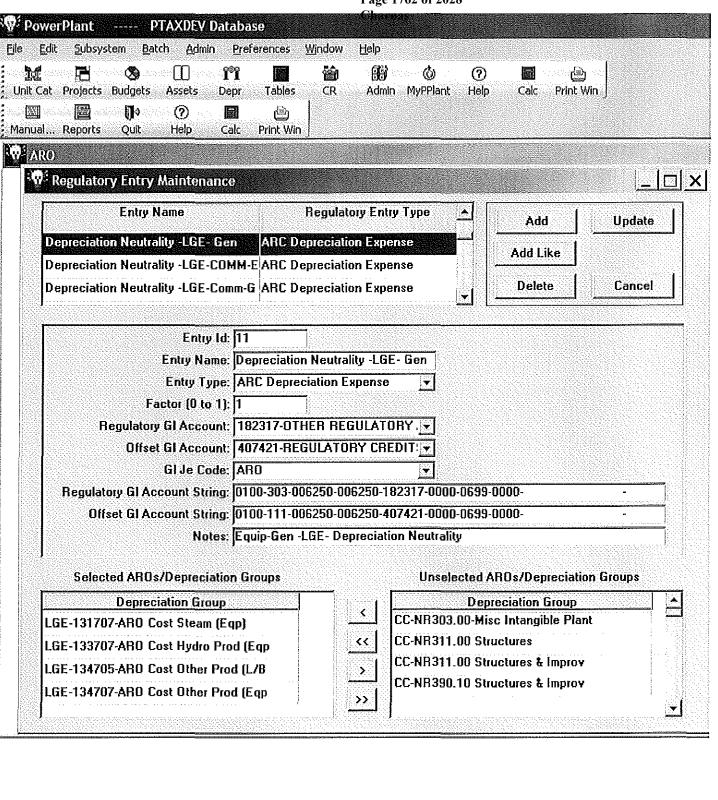
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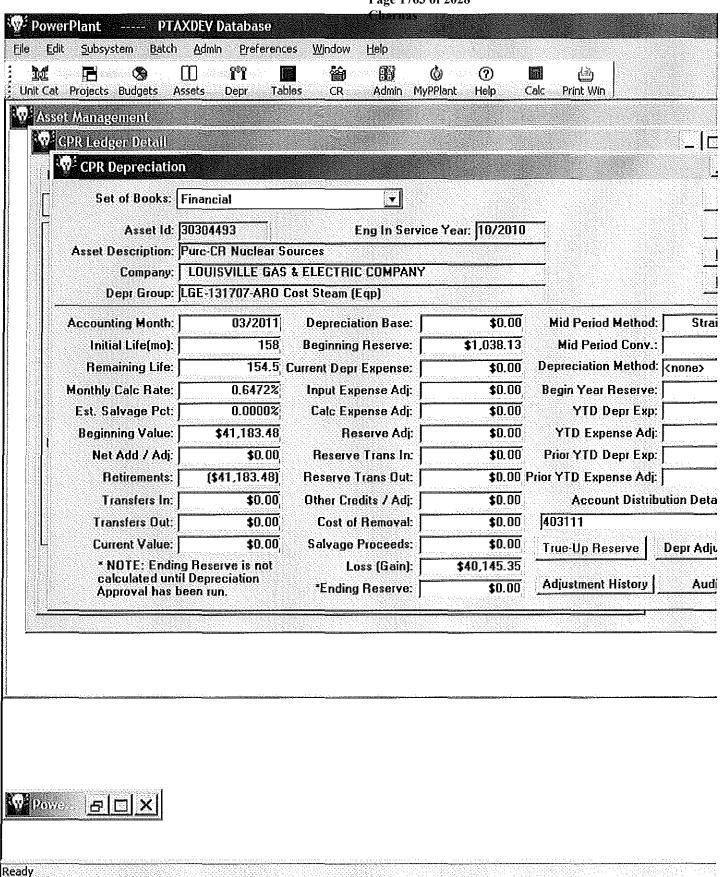
Subject: RE: ARO Settlements

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Attachment to Response to KU AG-1 Question No. 201 Page 1762 of 2028





Attachment to Response to KU AG-1 Question No. 201 Page 1764 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
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Note: Phone numbers will not change.

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Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

All:

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Attachment to Response to KU AG-1 Question No. 201 Page 1765 of 2028

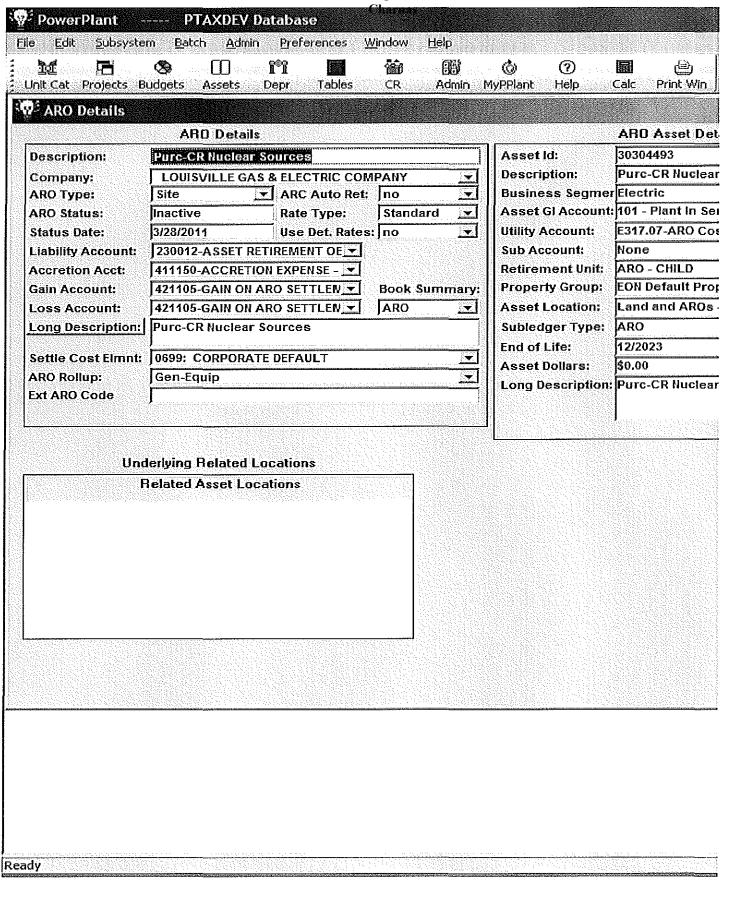
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<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1766 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1767 of 2028
Charnas

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### Attachment to Response to KU AG-1 Question No. 201 Page 1769 of 2028 Charnas

## Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Thursday, March 31, 2011 2:11 PM

To:

PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc:

Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject:

RE: ARO Settlements

Please have the sql script below run to fix the effective dated rates problem described below.

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

#### FYI -

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Attachment to Response to KU AG-1 Question No. 201 Page 1770 of 2028 Charnas

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

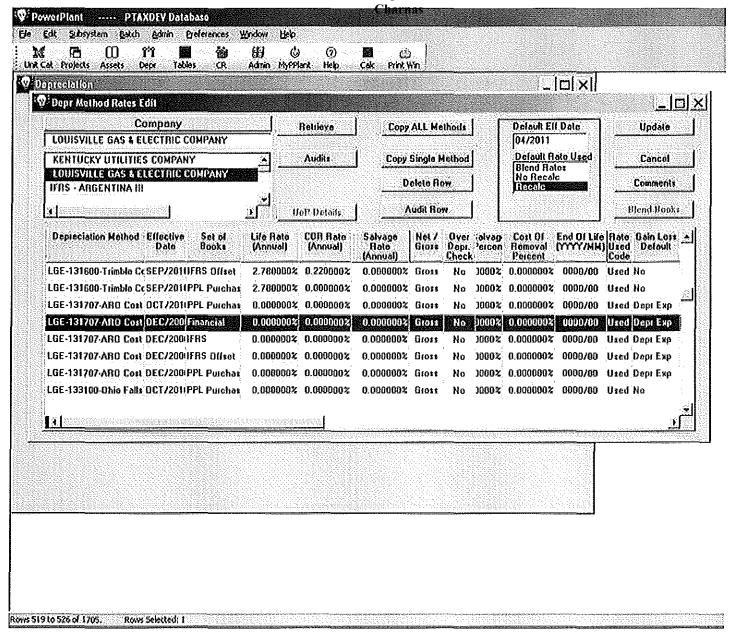
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1772 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records.

The New Address is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

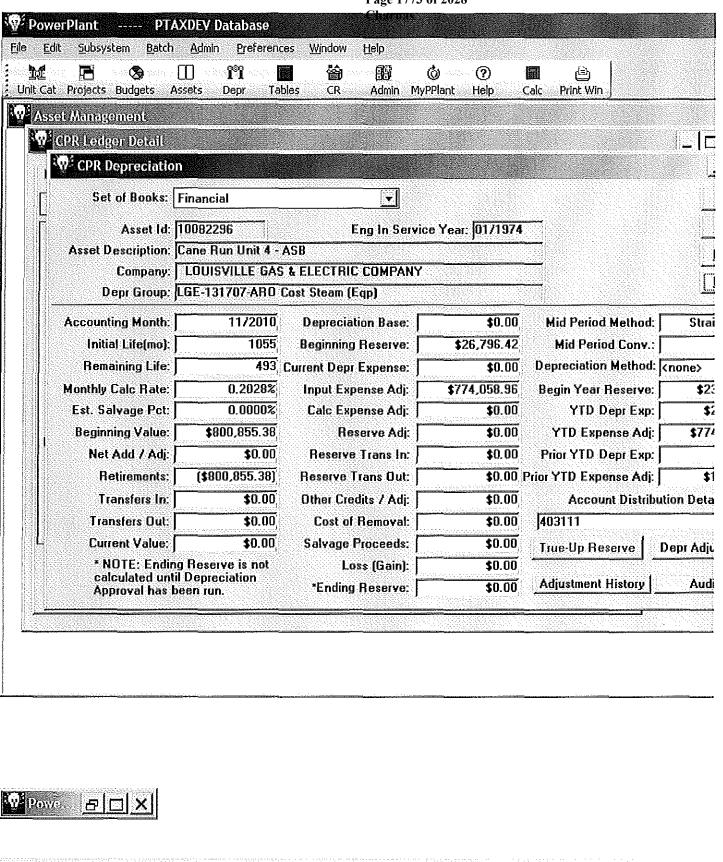
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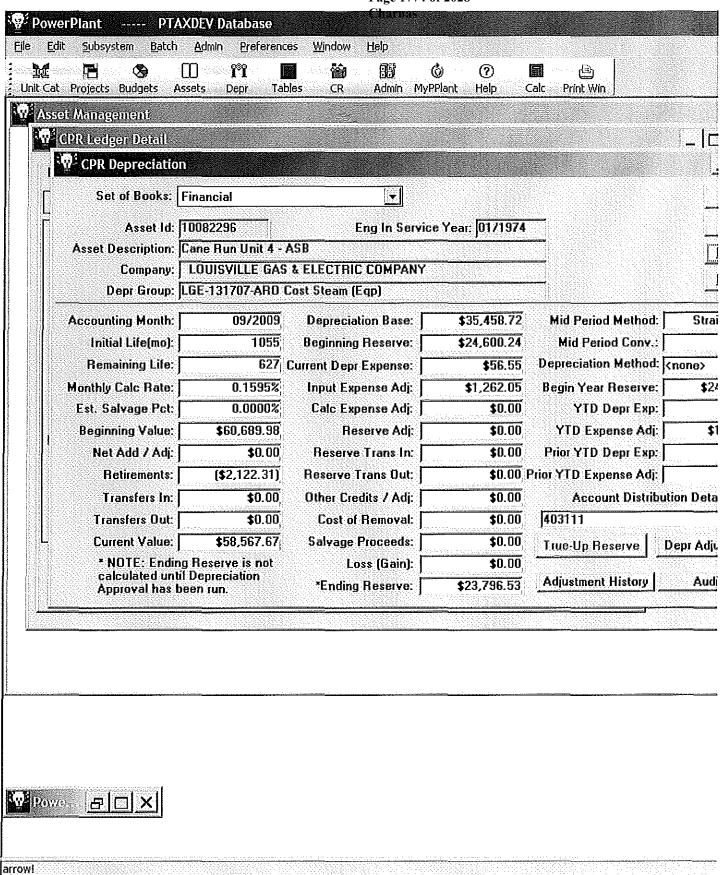
I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1773 of 2028



Ready



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1775 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

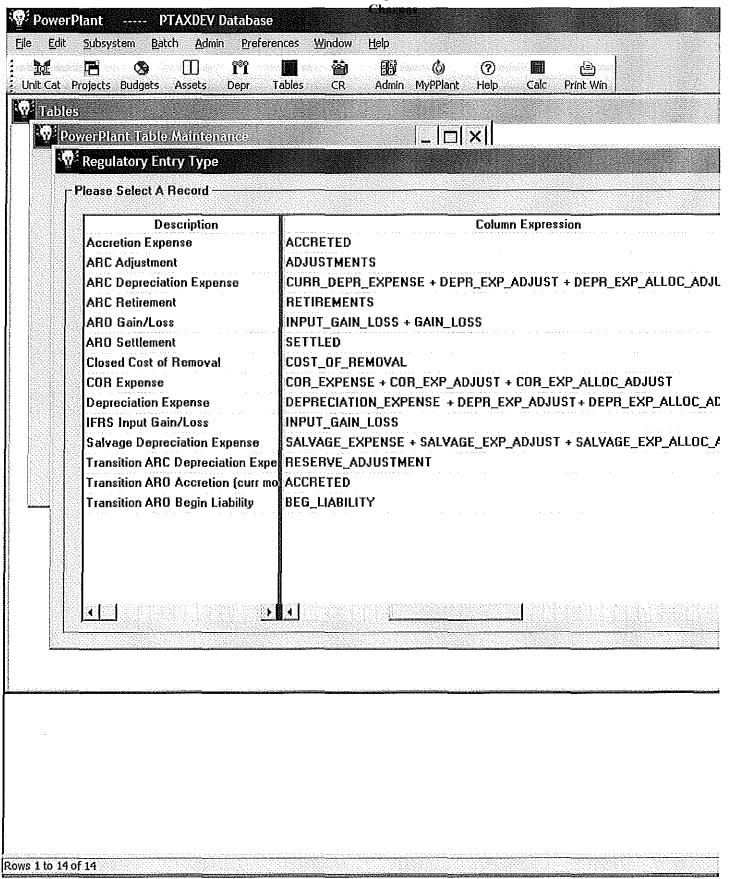
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1777 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

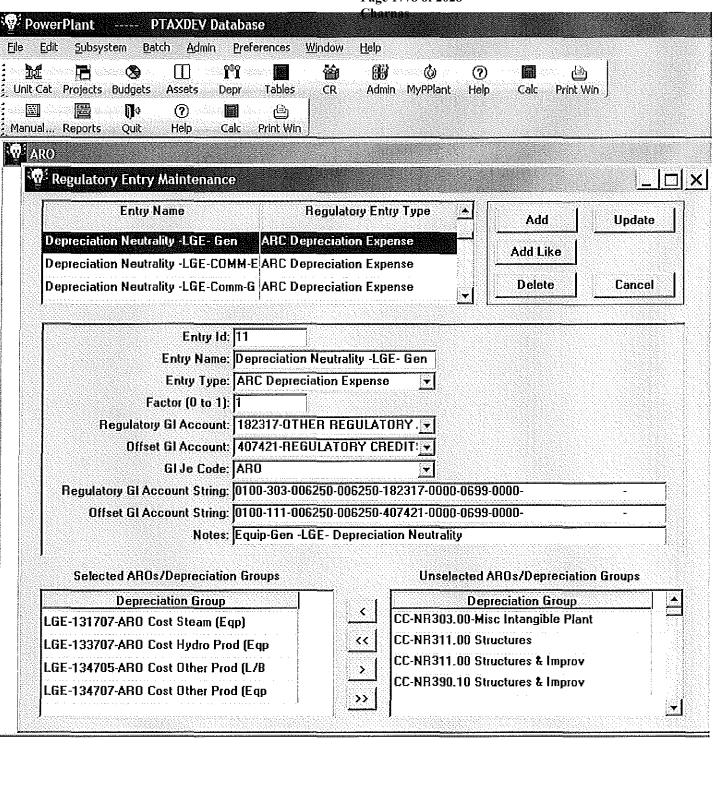
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

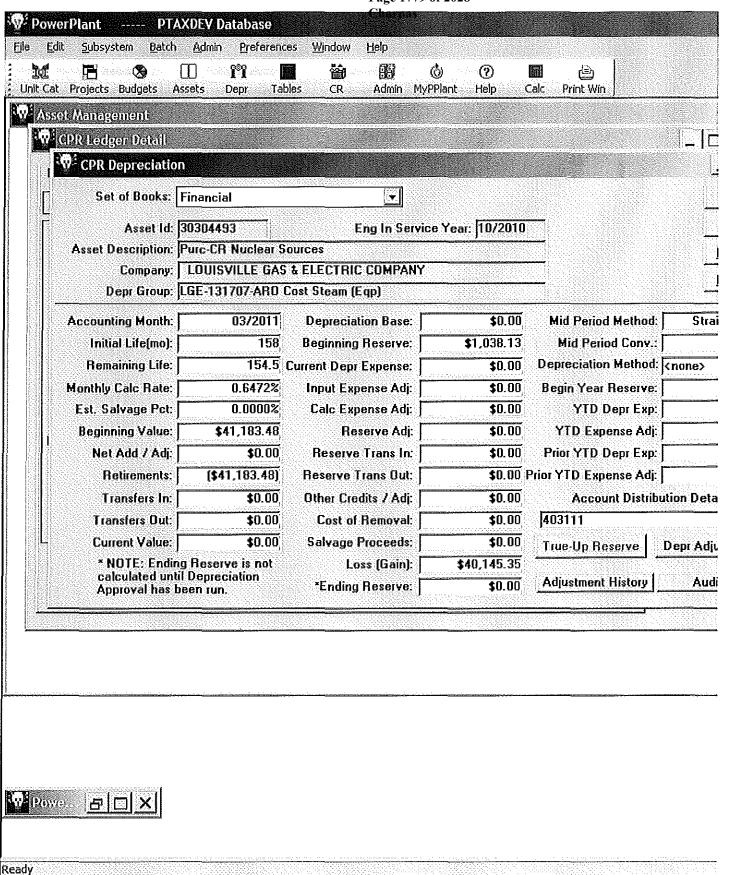
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1778 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1779 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1780 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1781 of 2028

still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1782 of 2028

ARO Details	ARO Details			ARO Asset D
Description: Company: ARO Type: ARO Status: Status Date: Liability Account: Accretion Acct: Gain Account: Loss Account:	Purc-GR Nuclear Sources  LOUISVILLE GAS & ELECTRIC COMPANY Site ARC Auto Ret: no Inactive Rate Type: Standard 3/28/2011 Use Det. Rates: no 230012-ASSET RETIREMENT OF ATTEMPT BOOK Sumi 421105-GAIN ON ARO SETTLEN ARO Purc-CR Nuclear Sources	DD B A A U S S R R P A	asset Id: lescription: lusiness Segments asset Gl Account: lub Account: letirement Unit: roperty Group: asset Location: lubledger Type:	Concession and the control of the co
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ARO Rollup: Ext ARO Code Und	Gen-Equip	_ <u>-</u> #  ^	nd of Life: sset Dollars:	\$0.00

Attachment to Response to KU AG-1 Question No. 201
Page 1783 of 2028
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Attachment to Response to KU AG-1 Question No. 201 Page 1784 of 2028

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### Attachment to Response to KU AG-1 Question No. 201 Page 1785 of 2028 Charnas

### Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Wednesday, March 30, 2011 6:25 PM

To:

Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc:

Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject:

**RE: ARO Settlements** 

#### FYI -

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

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Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

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What's plan B?

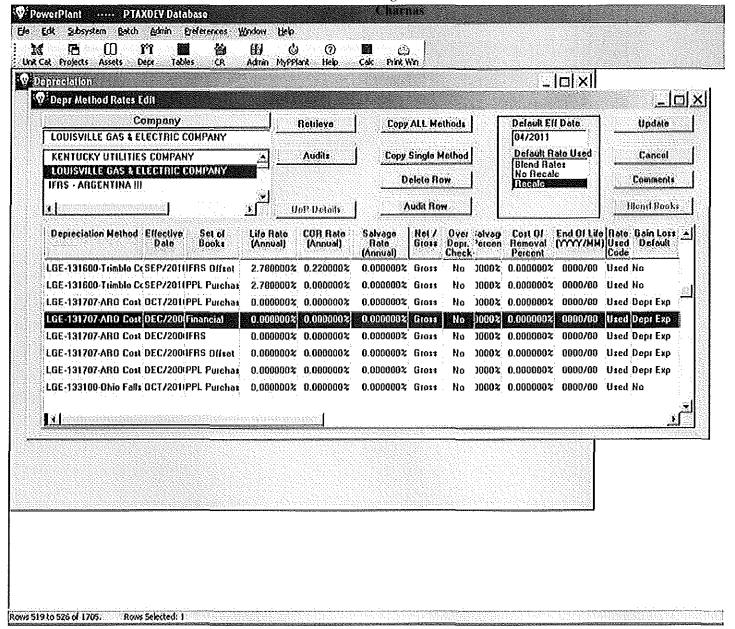
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**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



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Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

#### Angela,

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You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1787 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

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Sent: Wednesday, 30 March, 2011 8:58 AM

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Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

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Thanks, Angela

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**Subject:** RE: ARO Settlements

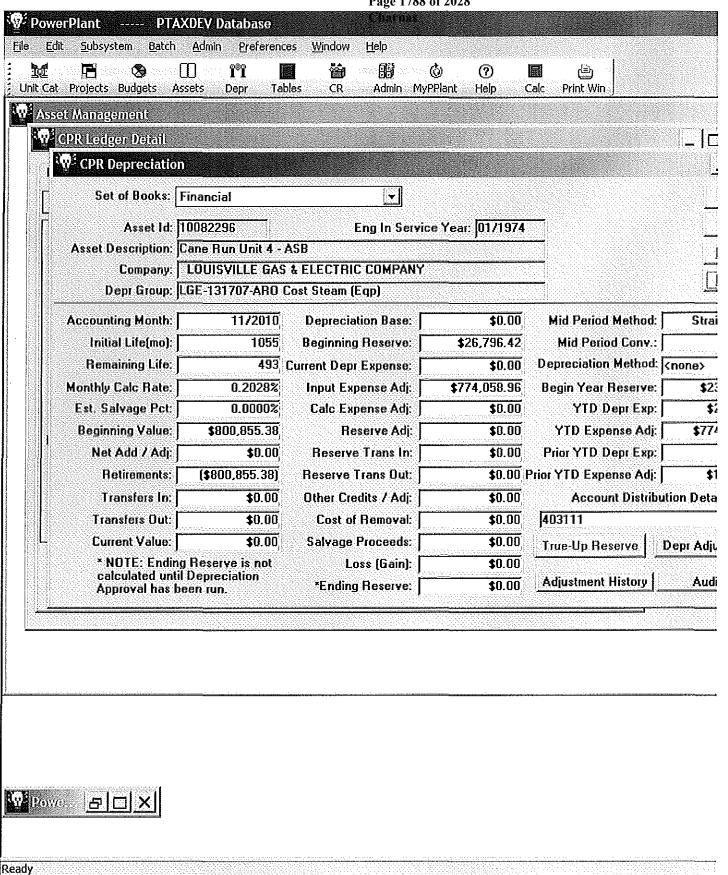
Jim,

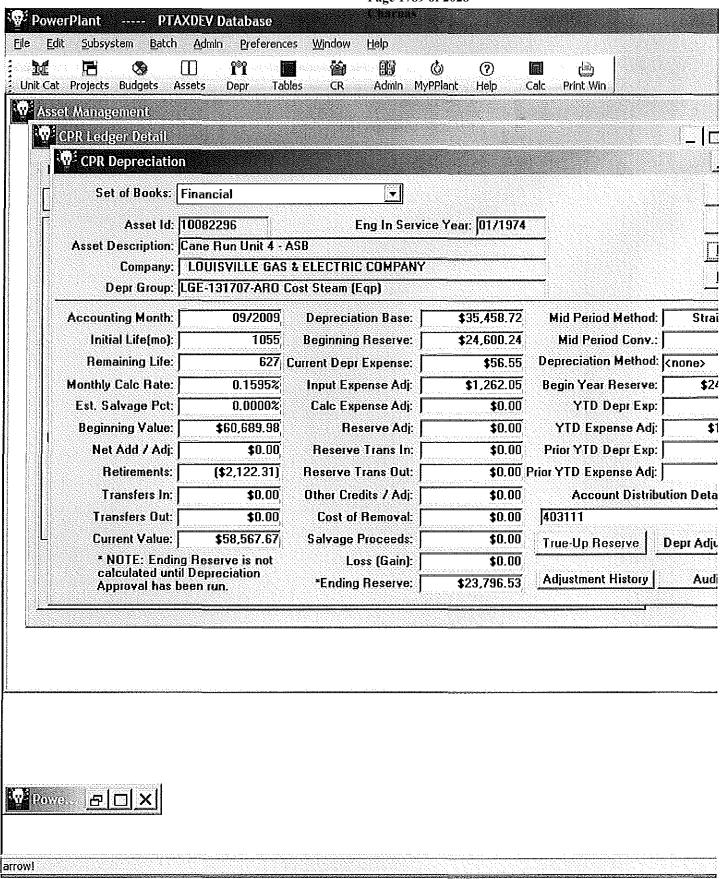
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I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?





Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1790 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

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To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

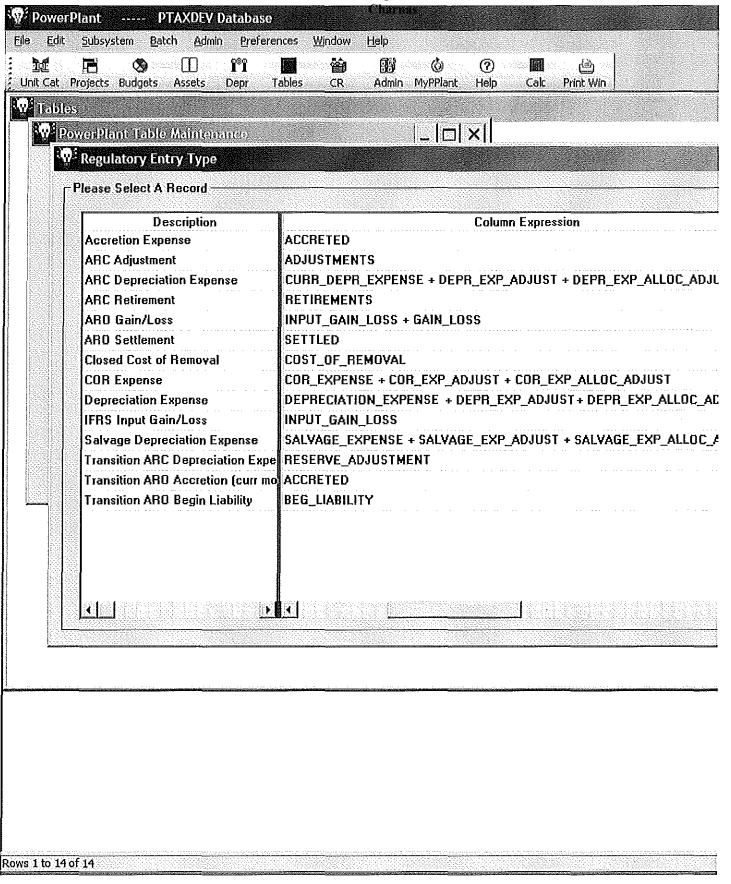
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Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1792 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

Atlanta, GA 30339

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

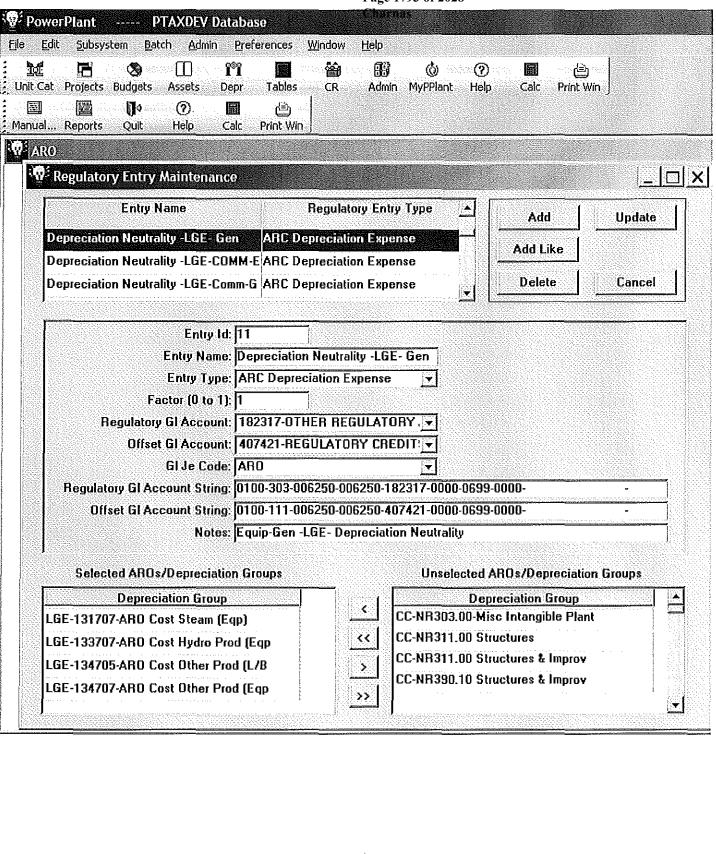
To: Jim Ogilvie: PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

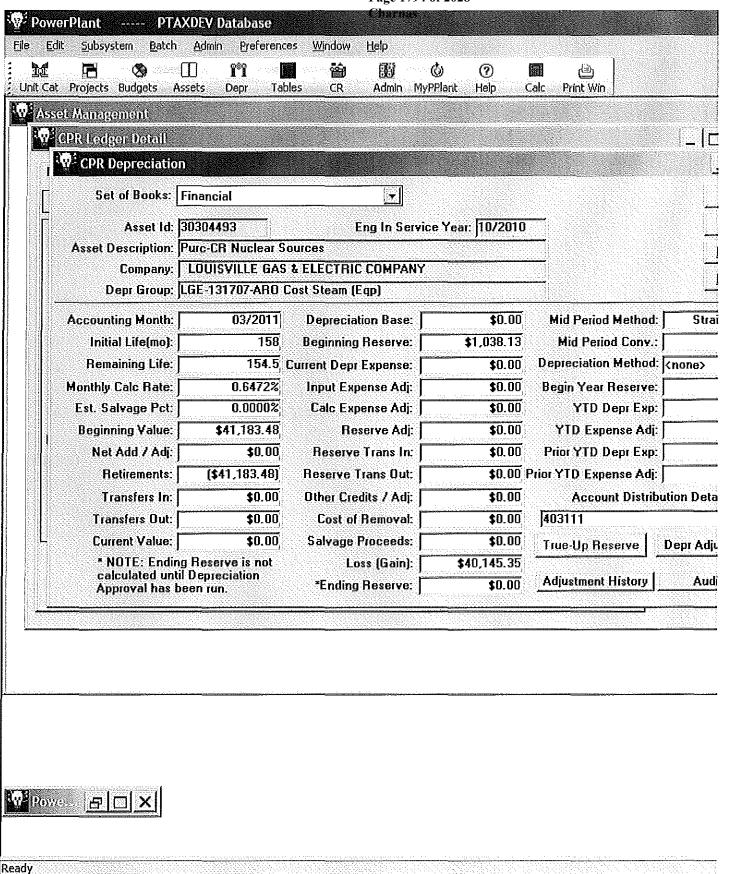
Subject: RE: ARO Settlements

Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.



Attachment to Response to KU AG-1 Question No. 201 Page 1794 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1795 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahiby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1796 of 2028

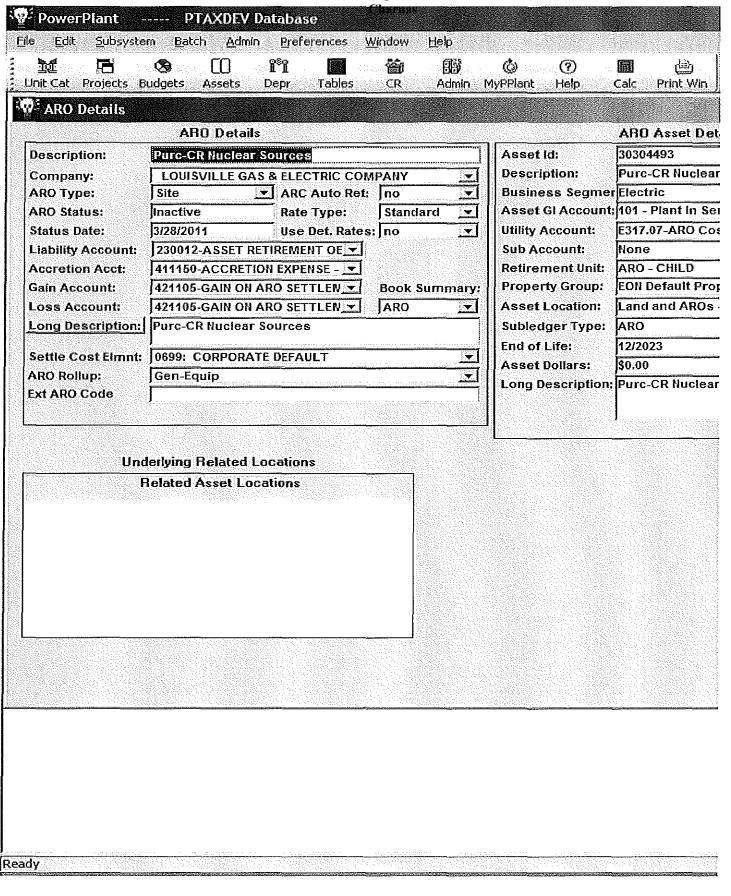
still did not work. So, I tried to process the settlement both? With that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1797 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1798 of 2028

Please update your address book accord	l. e-mail addresses filts a changed from @eon-us.com to @lge-ku.com. lingly.
addressed or copied. It may contain may retransmission, dissemination or other t persons or entities other than the intend	mission is intended only for the person or entity to which it is directly terial of confidential and/or private nature. Any review, use of, or taking of any action in reliance upon, this information by led recipient is not allowed. If you received this message and the please contact the sender and delete the material from your/any
NOTE: The extension for all E.ON U.S. Please update your address book accord	. e-mail addresses has changed from @eon-us.com to @lge-ku.com. lingly.
addressed or copied. It may contain mat retransmission, dissemination or other i persons or entities other than the intend	mission is intended only for the person or entity to which it is directly terial of confidential and/or private nature. Any review, use of, or taking of any action in reliance upon, this information by led recipient is not allowed. If you received this message and the please contact the sender and delete the material from your/any
NOTE: The extension for all E.ON U.S. Please update your address book accord	e-mail addresses has changed from @eon-us.com to @lge-ku.com. lingly.
addressed or copied. It may contain mat retransmission, dissemination or other t persons or entities other than the intend	mission is intended only for the person or entity to which it is directly erial of confidential and/or private nature. Any review, use of, or taking of any action in reliance upon, this information by led recipient is not allowed. If you received this message and the please contact the sender and delete the material from your/any
NOTE: The extension for all E.ON U.S. Please update your address book accord	e-mail addresses has changed from @eon-us.com to @lge-ku.com. ingly.
addressed or copied. It may contain mat	mission is intended only for the person or entity to which it is directly erial of confidential and/or private nature. Any review, use of, or taking of any action in reliance upon, this information by

Attachment to Response to KU AG-1 Question No. 201 Page 1799 of 2028

persons or entities other than the intended recipient is not will allow the information contained therein by error, please contact the sender and delete the material from your/any storage medium.

NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium.

Attachment to Response to KU AG-1 Question No. 201 Page 1800 of 2028 Charnas

## Clark, Ed

From:

Sent:

Wiseman, Sara Tuesday, April 26, 2011 9:09 PM Leichty, Doug Crescente, Angela VASCC site visit ARO entry.docx

To:

Cc:

Subject:



VASCC site visit ARO entry.doc...

Doug:

Would you take a look at this response and see if it looks OK? If so, we will pass it by Shannon.

Thanks.

## KENTUCKY UTILITIES COMPANY D/B/A OLD DOMINION POWER COMPANY

**CASE NO. PUE 2011-00013** 

Response to SCC Data Requests (2<sup>nd</sup> Set)
Dated: April 21, 2011

Responding Witness: Shannon L. Charnas

- Q. Provide December 2010 ARO journal entry activity.
- A. See below.

Account	Debit	Credit
Depreciation Expense (403)	242,198.00	
Accretion Expense (411)	223,682.00	
Accumulated Depreciation (108)		242,198.00
ARO Liability (230)		223,682.00
Regulatory Credit (407)		466,346.00
Regulatory Asset (182)	466,346.00	

Total 932,226.00 932,226.00

Attachment to Response to KU AG-1 Question No. 201 Page 1802 of 2028 Charnas

Crescente, Angela

From:

Crescente, Angela

Sent:

Tuesday, April 26, 2011 4:20 PM

To: Subject: Koellner, Corey RE: ARO Regulatory Assets

Follow Up Flag: Flag Status:

Follow up Completed

Tracking:

Recipient

Koellner, Corey

Wiseman, Sara

Read

Read: 4/26/2011 4:21 PM Read: 4/26/2011 4:50 PM

Corey,

These entries were performed as reclassifications from the ARO Asset and Accumulated Depreciation accounts to the Regulatory Asset account.

Thanks, Angela

From: Koellner, Corey

Sent: Tuesday, April 26, 2011 4:15 PM

To: Crescente, Angela

Subject: RE: ARO Regulatory Assets

OK...thanks, Angela. I'll net these with the debits and, therefore, will have no credits included on the report.

For my reference, do you know why we net these?

From: Crescente, Angela

**Sent:** Tuesday, April 26, 2011 4:08 PM

To: Koeliner, Corey

Subject: RE: ARO Regulatory Assets

Attachment to Response to KU AG-1 Question No. 201 Page 1803 of 2028 Charnas

Corey,

The ones that you have listed below should be considered as offsets to the debits.

Thanks, Angela

From: Koellner, Corey

**Sent:** Tuesday, April 26, 2011 11:26 AM

To: Crescente, Angela

**Subject:** FW: ARO Regulatory Assets

Spoke briefly with Karen when she came down to speak with me regarding another issue. We can talk with her again if you like, but I gathered that Sarah has historically known whether we should present the credits as credits on the Form 3 filing, or if they should be treated as offsets to the debits (due to the nature of the entry). We can discuss with Karen or Sarah after lunch.

Thanks,

Corey

From: Koeliner, Corey

Sent: Thursday, April 21, 2011 5:12 PM

To: Crescente, Angela

Subject: ARO Regulatory Assets

Angela –

I'm preparing the Regulatory Asset/Liab information that will be included in the Form 3 filing. Karen previously completed this information and during our transition she indicated I should reach out to you to assist if I identify any ARO assets with credit activity. That being said, the four items below have credit activity during 1Q11:

Account	Account	Je Name	Line Description	Debits
182317	OTHER REGULATORY ASSETS ARO -	J309-0100-0111 Adjustment USD 01-	Journal Import Created	0.00
182317	GENERATION OTHER REGULATORY ASSETS ARO -	JAN-11 J315-0100-0211 Adjustment USD 01-	Journal Import Created	0.00
102517	GENERATION	FEB-11	Journal Import Created	0.00

Attachment to Response to KU AG-1 Question No. 201 Page 1804 of 2028

182317 OTHER REGULATORY ASSETS ARO - J319-0100-0311 Adjustment USD 01- Charnal Import Created 0.00
GENERATION MAR-11
182317 OTHER REGULATORY ASSETS ARO - PP ARO USD 01-MAR-11 Journal Import Created 6,347,740.

If you could let me know if these items are accurately included as credits, it would be appreciated. I'm assuming you provided Karen similar information in the past and this email will make sense – if it doesn't, however, please let me know.

### Thanks!

Corey Koellner
Regulatory Accounting & Reporting
LG&E and KU Energy LLC
Direct: (502) 627-2965
corey.koellner@lge-ku.com

### Attachment to Response to KU AG-1 Question No. 201 Page 1805 of 2028 Charnas

## Clark, Ed

From:

Leichty, Doug

Sent: To: Tuesday, April 26, 2011 10:16 AM Wiseman, Sara; Crescente, Angela

Subject:

FW: ARO Accretion and Depreciation.xls

I think we should provide at least whole dollars and dress up the formatting with Q. and A. and table cosmetics. Also, Shannon will need to see response if she hasn't already.

Q. Provide December 2010 ARO journal entry activity.

From: Crescente, Angela

Sent: Tuesday, April 26, 2011 9:41 AM

**To:** Leichty, Doug **Cc:** Wiseman, Sara

Subject: ARO Accretion and Depreciation.xls

Doug,

Here is the information requested from our meeting yesterday.

ARO Accretion and Depreciatio...

Thanks, Angela Attachment to Response to KU AG-1 Question No. 201 Page 1806 of 2028 Charnas

ARO Depreciation and Accretion In Thousands December Activity

Account	Debit	Credit		
403	242			Depreciation Expense
411	224			Accretion Expense
108			242	Accumulated Depreciation
230		ı	224	ARO Liability
407			466	Regulatory Credit
182	466			Regulatory Asset
	932		932	•

Attachment to Response to KU AG-1 Question No. 201 Page 1807 of 2028 Charnas

#### Clark, Ed

From:

Sent:

To: Cc:

Subject:

Crescente, Angela Tuesday, April 26, 2011 9:41 AM Leichty, Doug Wiseman, Sara ARO Accretion and Depreciation.xls

Doug,

Here is the information requested from our meeting yesterday.



ARO Accretion and Depreciatio...

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1808 of 2028 Charnas

ARO Depreciation and Accretion In Thousands December Activity

Account	Debit	Credit		
403	242			Depreciation Expense
411	224			Accretion Expense
108			242	Accumulated Depreciation
230			224	ARO Liability
407			466	Regulatory Credit
182	466			Regulatory Asset
	932	***	932	•

#### Clark, Ed

From: Richardson, Ralph

**Sent:** Tuesday, April 26, 2011 8:38 AM

To: Crescente, Angela Subject: RE: ARO Settlements

I ran this in PTAXDEV. 743 rows were changed.

From: Crescente, Angela

Sent: Tuesday, April 26, 2011 8:36 AM

To: Richardson, Raiph

Subject: FW: ARO Settlements

Ralph,

Please run the attached SQL in PP DEV.

Thanks!

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Thursday, March 31, 2011 2:11 PM

To: PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Please have the sql script below run to fix the effective dated rates problem described below.

Attachment to Response to KU AG-1 Question No. 201 Page 1810 of 2028 Charnas

Commit;

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

FYI-

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Ogilvie; PowerPlant Support; Jim Dahiby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

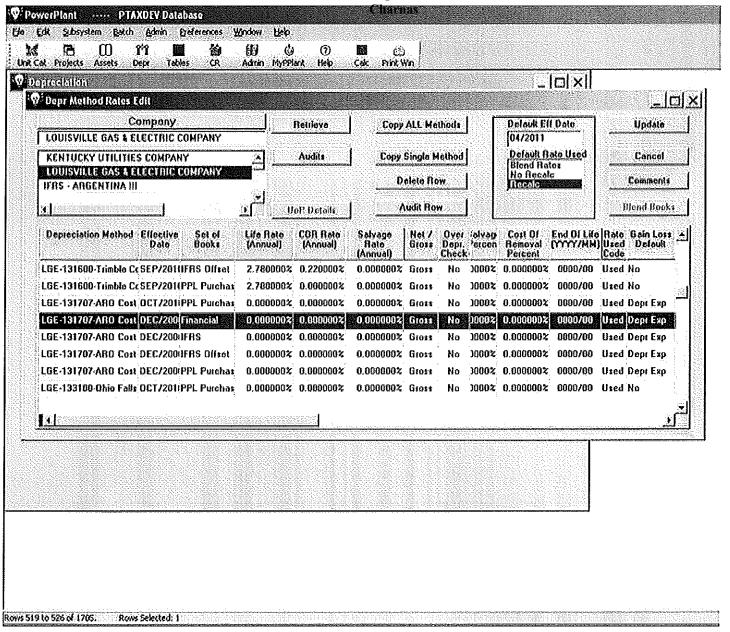
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Oqilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

#### Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1812 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

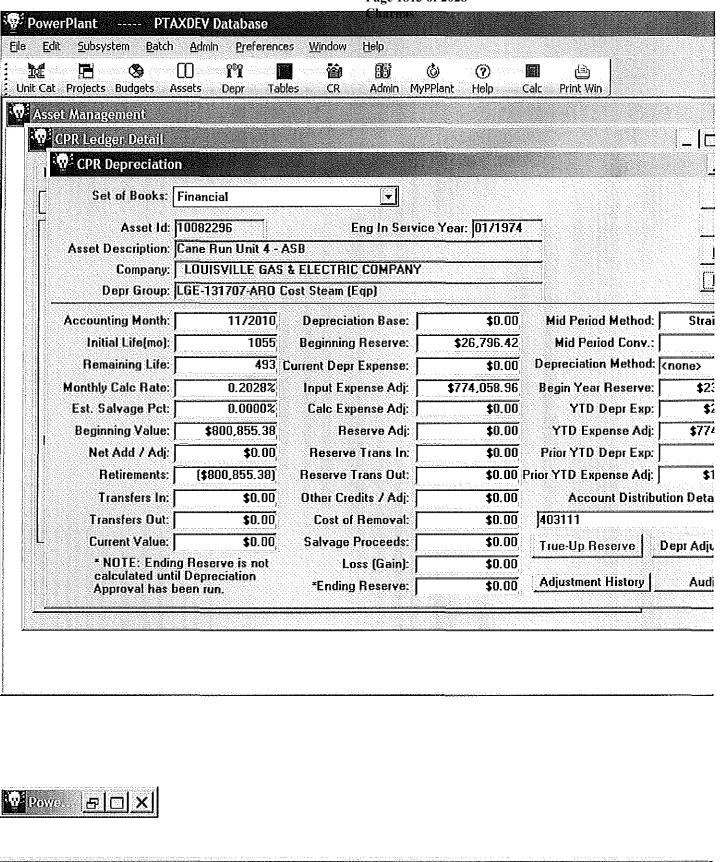
Jim,

OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

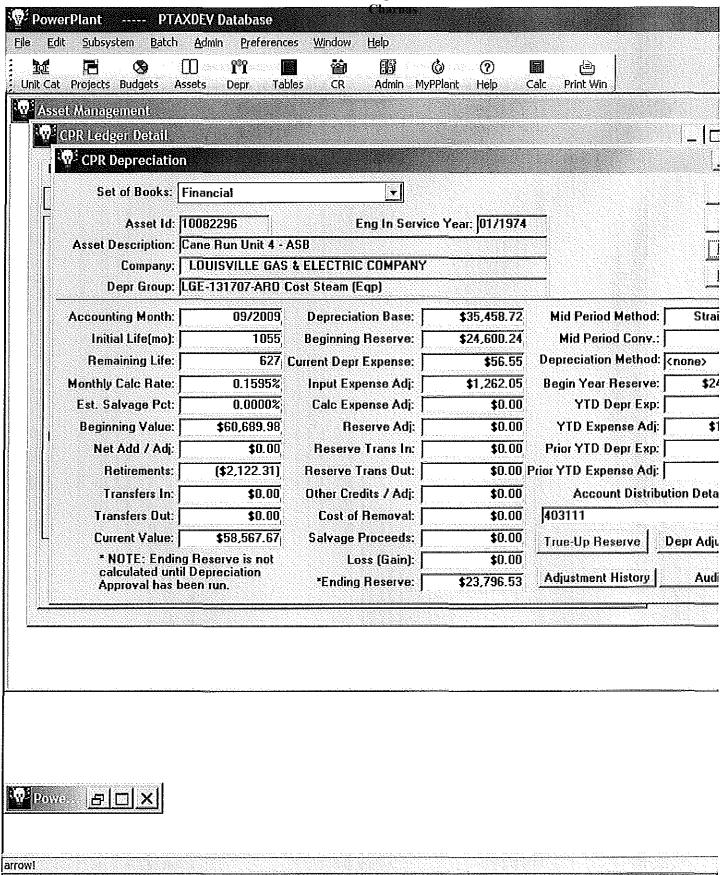
On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?



Ready



Thanks, Angela

# Attachment to Response to KU AG-1 Question No. 201 Page 1815 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

**Sent:** Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

**Subject:** RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

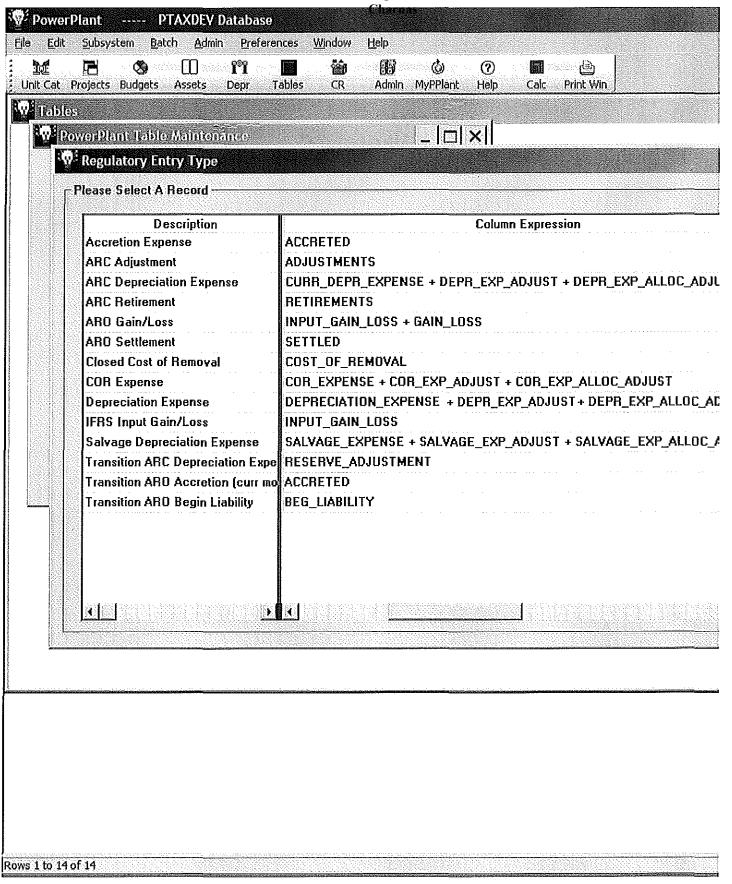
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.



Thanks, Angela

## Attachment to Response to KU AG-1 Question No. 201 Page 1817 of 2028

Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

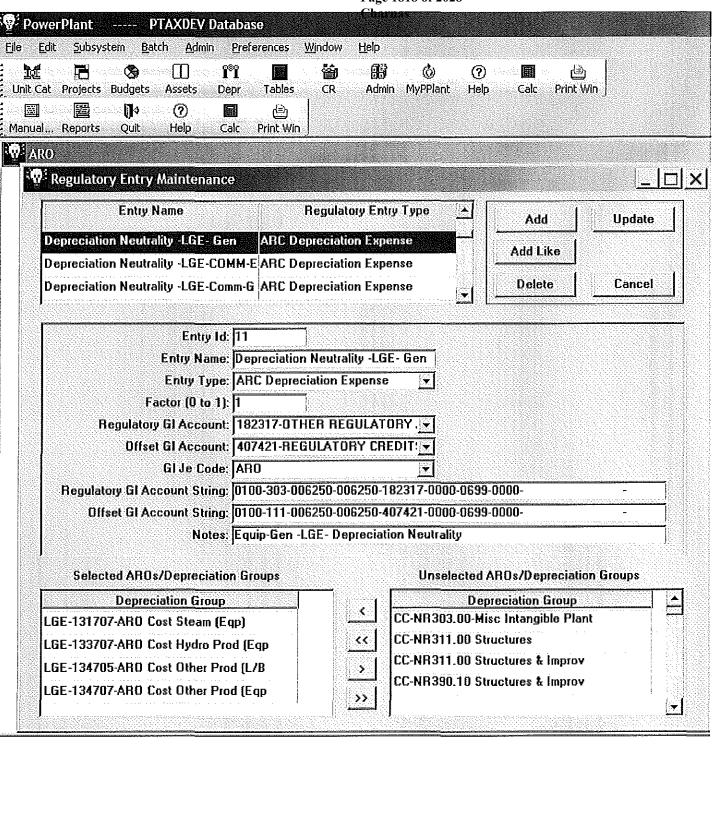
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

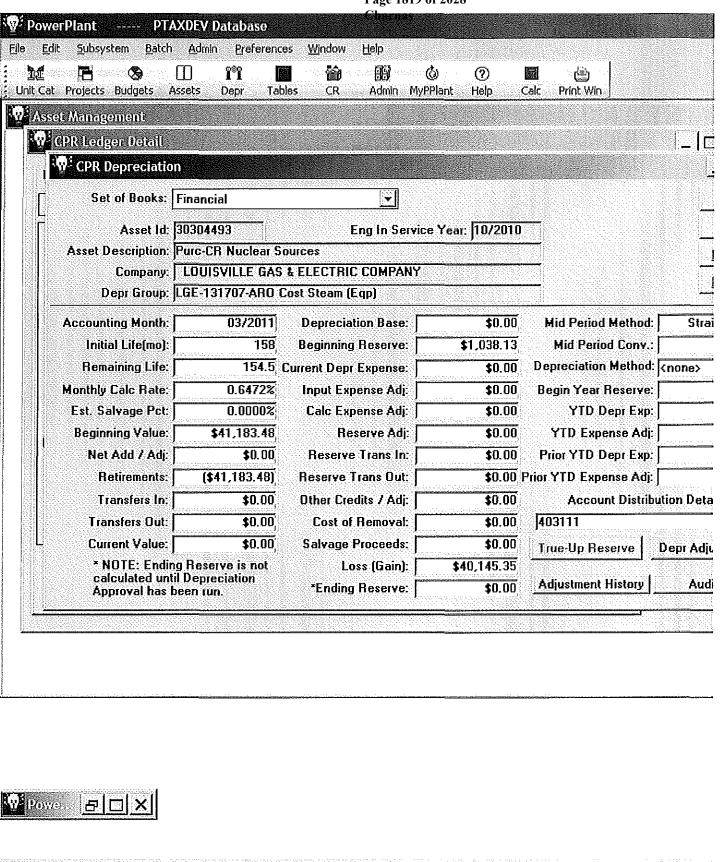
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1818 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1819 of 2028



Ready

Attachment to Response to KU AG-1 Question No. 201 Page 1820 of 2028 Charnas

Thanks, Angela

**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

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Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

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Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

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 $\begin{array}{c} Attachment \ to \ Response \ to \ KU \ AG-1 \ Question \ No. \ 201 \\ Page \ 1821 \ of \ 2028 \end{array}$ 

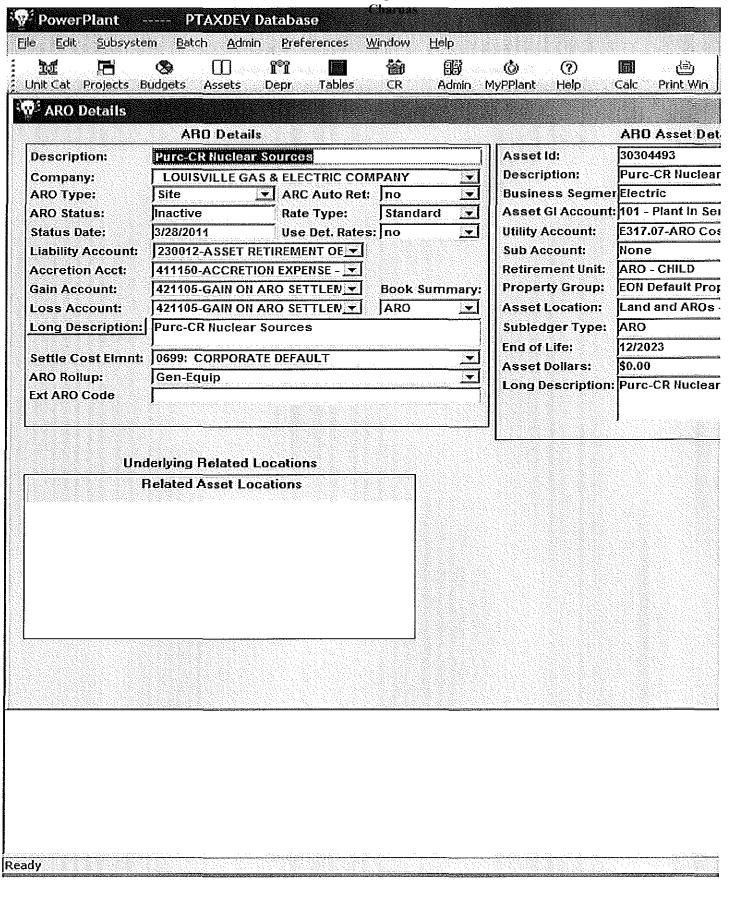
still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1822 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1823 of 2028
Charnas

NOTE: The extension for Please update your addre	r all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. ess book accordingly.
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NOTE: The extension for Please update your addre	r all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com, ess book accordingly.
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Attachment to Response to KU AG-1 Question No. 201 Page 1824 of 2028

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#### Clark, Ed

From:

Crescente, Angela

Sent:

Friday, April 15, 2011 9:26 AM

To:

'Brett.Wemer@ey.com'

Cc:

Wiseman, Sara

Subject:

FW: ARO liability account analyses for March 2011

Attachments:

230 Account Reconciliation.pdf

Brett,

The 230022 for LG&E and KU and the 230026 for LG&E are accounts used to reclass estimated current year budget dollars to the short-term liability. This is performed as a top-side adjustment only. Please see the attached account reconciliations.

Thanks, Angela

From: Brett.Wemer@ey.com [mailto:Brett.Wemer@ey.com]

Sent: Thursday, April 14, 2011 5:27 PM

**To:** Crescente, Angela **Cc:** Wiseman, Sara

Subject: ARO liability account analyses for March 2011

#### Angela,

I received the ARO 1000 liability reports within SharePoint for LG&E and KU and wanted to thank you for providing that. Ultimately, we would like to tie this ARO information into the trial balance that we have been provided for these entities. There were a few g/I accounts for both LG&E and KU that I could not tie to the G/L. I was hoping for these, you would be able to provide the account analysis to aid in my tying out.

For LG&E, the accounts are 230012 and 230016. For 230012, the ARO 1000 report has a balance of \$34,688,796 while the G/L has a balance of \$34,478,796. Account 230016 has an ARO 1000 report balance of \$18,010,655 and a G/L balance of \$17,243,453. For KU the account is 230012. For this account, the ARO 1000 report balance is \$54,275,053 and the G/L balance is \$54,123,077.

So if you would be able to provide the account analyses for LG&E of 230012 and 230016 in March 2011 and the account of 230012 for KU in March 2011, that would be great. If you think providing the analyses will not allow me to tie these amounts to the G/L, please let me know and we can discuss another option.

Thanks, Brett



Brett M. Wemer | Assurance Services

Ernst & Young, LLP

400 West Market Street, Suite 2400, Louisville, KY 40202, United States of America

Office: 502.585.6463 | Fax: 866.672.6541 | brett.wemer@ey.com

EY/Comm: 5129363 Website: www.ey.com

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Attachment to Response to KU AG-1 Question No. 201 Page 1827 of 2028 Charnas

# LOUISVILLE GAS AND ELECTRIC COMPANY Trial Balance Account Reconciliation March 31, 2011

Department Name: Property Accounting

ount Name	: 230 Asset Retirement Obligation	Source A Oracle Trial Balance	Source B PowerPlant Balance	Difference
		***************************************		
230012	ASSET RETIREMENT OBLIGATIONS - STEAM	(34,478,795.60)		
230022	ASSET RETIREMENT OBLIGATIONS - STEAM - ST	(210,000.00)		
		(34,688,795.60)	(34,688,795.60)	·····
230013	ASSET RETIREMENT OBLIGATIONS - TRANSMISSION	(14,078.98)		
230023	ASSET RETIREMENT OBLIGATIONS - TRANSMISSION - ST	-		
		(14,078.98)	(14,078.98)	
230015	ASSET RETIREMENT OBLIGATIONS - DISTRIBUTION	(492,335.43)		v- •
230025	ASSET RETIREMENT OBLIGATIONS - DISTRIBUTION - ST			
		(492,335.43)	(492,335.43)	<u>-</u>
230016	ASSET RETIREMENT OBLIGATIONS - GAS	(17,243,452.83)		
230026	ASSET RETIREMENT OBLIGATIONS - GAS - ST	(767,202.00)		
		(18,010,654.83)	(18,010,654.83)	
230017	ASSET RETIREMENT OBLIGATIONS - COMMON	(103,734.67)	<u>,</u> .	
230027	ASSET RETIREMENT OBLIGATIONS - COMMON - ST			
		(103,734.67)	(103,734.67)	
		(53,309,599.51)	(53,309,599.51)	

Attachment to Response to KU AG-1 Question No. 201 Page 1828 of 2028 Charnas

#### Kentucky Utilities Company Trial Balance Account Reconciliation March 31, 2011

Department Name: Property Accounting

count Name: 230 Asset Retirement Obligation		Source A Oracle Trial Balance	Source B PowerPlant Balance	Difference
230012	ASSET RETIREMENT OBLIGATIONS - STEAM	(54,123,077.31)		
230022	ASSET RETIREMENT OBLIGATIONS - STEAM - ST	(151,976.00)		
		(54,275,053.31)	(54,275,053.31)	
230013	ASSET RETIREMENT OBLIGATIONS - TRANSMISSION	(88,962.48)		· <del>12</del>
230023	ASSET RETIREMENT OBLIGATIONS - TRANSMISSION - ST	<del>-</del>		
		(88,962.48)	(88,962.48)	
230015	ASSET RETIREMENT OBLIGATIONS - DISTRIBUTION	(294,022.13)		·
230025	ASSET RETIREMENT OBLIGATIONS - DISTRIBUTION - ST			
		(294,022,13)	(294,022.13)	<del>-</del>
		(54,658,037.92)	(54,658,037.92)	

Attachment to Response to KU AG-1 Question No. 201 Page 1829 of 2028 Charnas

#### Clark, Ed

From:

Brett.Wemer@ey.com

Sent:

Thursday, April 14, 2011 5:27 PM

To: Cc: Crescente, Angela Wiseman, Sara

Subject:

ARO liability account analyses for March 2011

#### Angela,

I received the ARO 1000 liability reports within SharePoint for LG&E and KU and wanted to thank you for providing that. Ultimately, we would like to tie this ARO information into the trial balance that we have been provided for these entities. There were a few g/l accounts for both LG&E and KU that I could not tie to the G/L. I was hoping for these, you would be able to provide the account analysis to aid in my tying out.

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Thanks, Brett

Brett M. Wemer | Assurance Services

Ernst & Young, LLP

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Office: 502.585.6463 | Fax: 866.672.6541 | brett.wemer@ey.com

EY/Comm: 5129363 Website: <u>www.ey.com</u>

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#### Clark, Ed

From: PowerPlant Support <support@pwrplan.com>

**Sent:** Wednesday, April 13, 2011 11:22 AM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

I create new versions of each report and sent them to Nick to be included in the next rebuild.

Whenever this new rebuild is made available, let me know, and I'll help you modify the report setup in Powerplant to point to the new reports so you can test the new reports.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 13 April, 2011 9:35 AM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

Sure thing, you go to Assets>ARO>Reg Entry>Reports and it is report number ARO-4005.

By the way, I remembered on the way home last night that I have this same problem on report "Reg-1001" so the asset adjustment that I did is not showing up on this report by asset either. I'm sorry, I should of thought of that sooner. This report is in the same location as the one above.

Also, Nick Alexander is here today and tomorrow working on some things for us including simple formatting tweeks on my reports, but he doesn't want to send them to the build until you are finished so he doesn't cause you any trouble. So he wanted me to keep him posted of when you are completed with your changes.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, April 13, 2011 9:26 AM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Angela,

Can you tell me where in Powerplant you go to get to this report? I've lost my notes on how to find this report again.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 12 April, 2011 8:32 AM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Attachment to Response to KU AG-1 Question No. 201 Page 1831 of 2028 Charnas

Sunjin,

Any word on the progress of the report? Just checking on it because I will be using it for my monthly account reconciliations.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 3:09 PM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Report change won't be a quick turn around.

It will likely be next week before you'll get the report changed.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 1:48 PM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

I need to post these asset adjustments today since we have to close first thing in the morning. Are you expecting the report modification to happen today or can I go ahead and post these transactions and fix the report later? Is there anything else I can do to help?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 9:35 AM

**To:** PowerPlant Support; Crescente, Angela; Jim Ogilvie **Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Angela called and provided clarification. I still had journal entries on the brain. The report can be modified to include asset id information.

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

**Sent:** Tuesday, 05 April, 2011 9:16 AM **To:** 'Crescente, Angela'; Jim Ogilvie

Attachment to Response to KU AG-1 Question No. 201 Page 1832 of 2028 Charnas

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

No, there is no way this report can show the asset\_id information for the entry you are asking about. You could run a query using the CPR Query tool window if you wanted to reconcile the asset adjustments dollars for the depr group.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Sunjin,

I am OK with the entry including both assets. Is there some way I can modify the report to show what happened by asset?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

**Sent:** Monday, April 04, 2011 5:00 PM **To:** Crescente, Angela; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

#### Angela,

The entry for \$ 9,754,171.05 that includes the two assets is a one line transaction due to both assets being in the same depr group, and the entry information is setup to pull from the depr\_ledger table, which is a table where the dollars are by depr group, and it doesn't appear that the setup can be changed to retain asset id information.

Sunjin Cone PowerPlant Support 770-937-3000

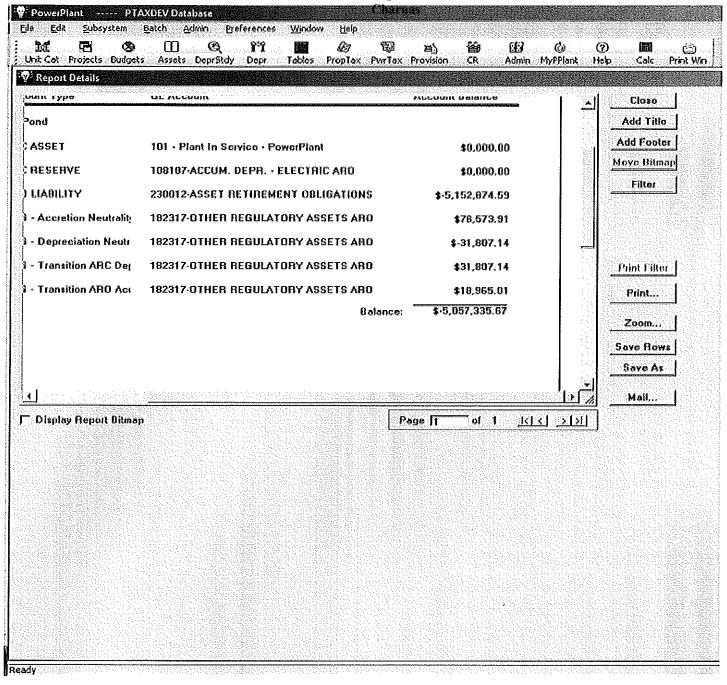
From: Crescente, Angela [mailto:Angela.Crescente@ige-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

OK, accidentally told a lie (I'm sorry, it's Monday). I kept looking and now I can see where the reg entries fired, but since there was more than one done on LGE, it combined them which makes sense. However, my report does not reflect this activity by asset. Any ideas on how to make that work? I thought it worked before, but I must be mistaken. The other asset was Purc-MC Ash Pond for \$4,696,835.38.



<<li>eq entry rows march test.xlsx>>

Thanks,

Angela

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#### Attachment to Response to KU AG-1 Question No. 201 Page 1836 of 2028 Charnas

#### Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Wednesday, April 13, 2011 9:26 AM

To:

Crescente, Angela

Subject:

RE: ARO reclass to 182 regulatory entries

Angela,

Can you tell me where in Powerplant you go to get to this report? I've lost my notes on how to find this report again.

Sunjin Cone

PowerPlant Support

770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 12 April, 2011 8:32 AM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

Any word on the progress of the report? Just checking on it because I will be using it for my monthly account reconciliations.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 3:09 PM

To: Crescente, Angela

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To: PowerPlant Support

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Thanks, Angela Attachment to Response to KU AG-1 Question No. 201 Page 1837 of 2028 Charnas

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 9:35 AM

**To:** PowerPlant Support; Crescente, Angela; Jim Ogilvie **Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

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Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

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Attachment to Response to KU AG-1 Question No. 201 Page 1838 of 2028 Charnas

Sunjin Cone PowerPlant Support 770-937-3000

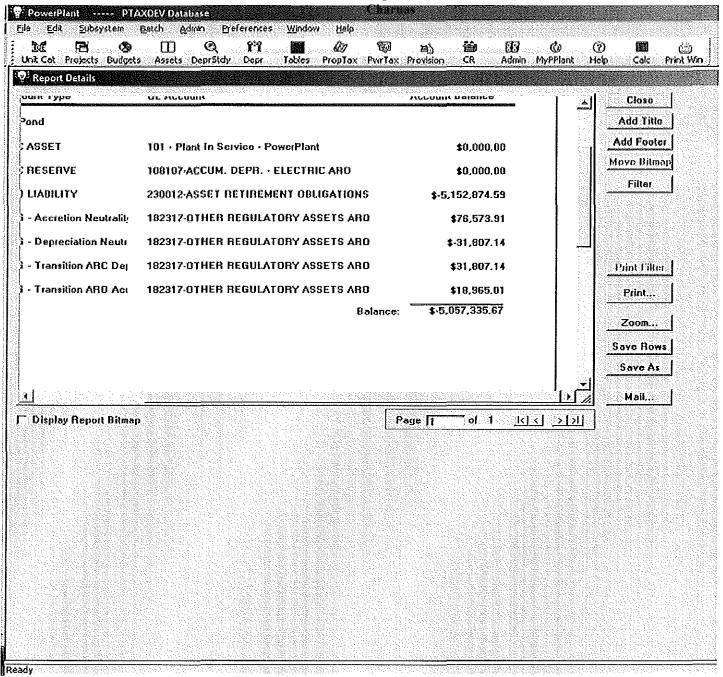
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**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

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<<li>e reg entry rows march test.xlsx>>

Thanks,

Angela

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Attachment to Response to KU AG-1 Question No. 201 Page 1840 of 2028 Charnas

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storage medium.

#### Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Tuesday, April 12, 2011 9:07 AM

To:

Crescente, Angela

Subject:

RE: ARO reclass to 182 regulatory entries

I'll work on it this week.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 12 April, 2011 8:32 AM

To: PowerPlant Support

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Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 1:48 PM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

I need to post these asset adjustments today since we have to close first thing in the morning. Are you expecting the report modification to happen today or can I go ahead and post these transactions and fix the report later? Is there anything else I can do to help?

Thanks, Angela

## Attachment to Response to KU AG-1 Question No. 201 Page 1842 of 2028

Charnas

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 9:35 AM

**To:** PowerPlant Support; Crescente, Angela; Jim Ogilvie **Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Angela called and provided clarification. I still had journal entries on the brain. The report can be modified to include asset id information.

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

**Sent:** Tuesday, 05 April, 2011 9:16 AM **To:** 'Crescente, Angela'; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

No, there is no way this report can show the asset\_id information for the entry you are asking about. You could run a query using the CPR Query tool window if you wanted to reconcile the asset adjustments dollars for the depr group.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Sunjin,

I am OK with the entry including both assets. Is there some way I can modify the report to show what happened by asset?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

**Sent:** Monday, April 04, 2011 5:00 PM **To:** Crescente, Angela; Jim Oglivie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

#### Angela,

The entry for \$ 9,754,171.05 that includes the two assets is a one line transaction due to both assets being in the same depr group, and the entry information is setup to pull from the depr\_ledger table, which is a table where the dollars are by depr group, and it doesn't appear that the setup can be changed to retain asset\_id information.

Attachment to Response to KU AG-1 Question No. 201 Page 1843 of 2028 Charnas

Sunjin Cone PowerPlant Support 770-937-3000

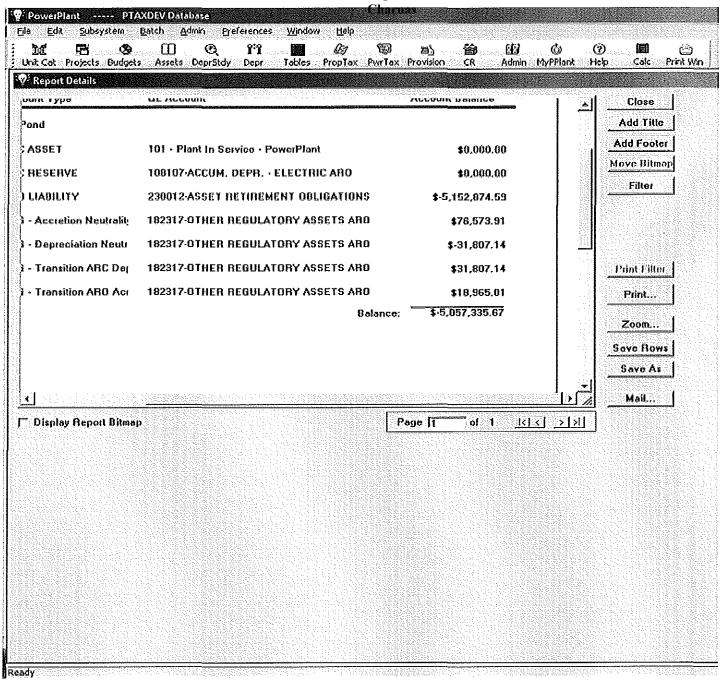
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

OK, accidentally told a lie (I'm sorry, it's Monday). I kept looking and now I can see where the reg entries fired, but since there was more than one done on LGE, it combined them which makes sense. However, my report does not reflect this activity by asset. Any ideas on how to make that work? I thought it worked before, but I must be mistaken. The other asset was Purc-MC Ash Pond for \$4,696,835.38.



NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

<<li>e reg entry rows march test.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1845 of 2028 Charnas

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storage medium.

Attachment to Response to KU AG-1 Question No. 201 Page 1846 of 2028 Charnas

# Clark, Ed

From:

Crescente, Angela

Sent:

Monday, April 11, 2011 5:20 PM Trenary, Samara

To:

Wiseman, Sara

Cc: Subject:

RE: ARO footnote

Samara:

Please see the attached footnote updates:





Note 4 - Asset Note 4 - Asset Note 4 - Asset Retirement Obli... Retirement Obli... Retirement Obli...

Thanks, Angela

From: Trenary, Samara

Sent: Monday, April 11, 2011 1:35 PM

To: Crescente, Angela Cc: Wiseman, Sara Subject: ARO footnote

### Angela

Will you let me know when you have the reporting package complete? Also, will you provide the updated numbers to the footnote? I believe I need all of this by 8am tomorrow. Let me know if you have any questions. Thanks!

# Note 4 - Asset Retirement Obligations

A summary of LKE's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

		O Net	ARO Liabilities		Regulatory Assets	
As of December 31, 2010	\$	97	\$	(103)	\$	9
ARO accretion and depreciation ARO settlements Removal cost incurred		- -	<u></u>	(2)		2
As of Error! Reference source not found., 2011	<u>\$</u>	97	\$	(105)	\$	11_

At March 31, 2011, AROs totaling \$105 million were recorded on the Balance Sheet, of which \$1 million is included in "Other current liabilities."

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Condensed Consolidated Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied; therefore, ARO net assets, ARO liabilities and regulatory asset balances do not net to zero.

LKE's AROs are primarily related to the final retirement of assets associated with generating units and natural gas mains and wells. LKE's transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

# Note 4 - Asset Retirement Obligations

A summary of KU's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

	O Net sets	ARO Liabilities		Regulatory Assets	
As of December 31, 2010	\$ 52	\$	(54)	\$	2
ARO accretion and depreciation			(1)		1
ARO settlements Removal cost incurred	 -		-		
As of Error! Reference source not found., 2011	\$ 52	\$	(55)	\$	3

At March 31, 2011, AROs totaling \$55 million were recorded on the Balance Sheet, of which less than \$1 million is included in "Other current liabilities."

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Condensed Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied.

KU's AROs are primarily related to the final retirement of assets associated with generating units. KU's transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

Attachment to Response to KU AG-1 Question No. 201 Page 1849 of 2028 Charnas

## Note 4 - Asset Retirement Obligations

A summary of LG&E's net ARO assets, ARO liabilities and regulatory assets established under the asset retirement and environmental obligations guidance of the FASB ASC follows:

	ARO Net Assets		ARO <u>Liabilities</u>		Regulatory Assets	
As of December 31, 2010	\$	45	\$	(49)	\$	7
ARO accretion and depreciation ARO settlements Removal cost incurred		- - -		(1)		1 -
As of Error! Reference source not found., 2011	\$	45	\$	(50)	\$	8

Pursuant to regulatory treatment prescribed under the regulated operations guidance of the FASB ASC, an offsetting regulatory credit for the ARO accretion and depreciation expense was recorded in "Depreciation and amortization" in the Condensed Statements of Income. As such, there is no impact on net income for the ARO accretion and depreciation. The ARO liabilities are offset by cash settlements that have not yet been applied; therefore, ARO net assets, ARO liabilities and regulatory asset balances do not net to zero.

LG&E's AROs are primarily related to the final retirement of assets associated with generating units and natural gas mains and wells. LG&E's transmission and distribution lines largely operate under perpetual property easement agreements which do not generally require restoration upon removal of the property. Therefore, under the asset retirement and environmental obligations guidance of the FASB ASC, no material asset retirement obligations are recorded for transmission and distribution assets.

Attachment to Response to KU AG-1 Question No. 201 Page 1850 of 2028 Charnas

# Clark, Ed

From:

Crescente, Angela

Sent:

To:

Monday, April 11, 2011 4:59 PM Trenary, Samara Wiseman, Sara

C¢: Subject: RE: ARO footnote

Samara:

The reporting package is complete for the ARO tab. I will be sending you the footnote updates shortly.

Thanks, Angela

From: Trenary, Samara

**Sent:** Monday, April 11, 2011 1:35 PM

To: Crescente, Angela Cc: Wiseman, Sara Subject: ARO footnote

## Angela

Will you let me know when you have the reporting package complete? Also, will you provide the updated numbers to the footnote? I believe I need all of this by 8am tomorrow. Let me know if you have any questions. Thanks!

### Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Tuesday, April 05, 2011 3:19 PM

To:

Crescente, Angela

Subject:

RE: ARO reclass to 182 regulatory entries

No harm.

The report changes are independent of the journal entries that were made.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 3:11 PM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

So, is it OK for me to go ahead and push the adjustments through. Will that hurt the changing of the report process?

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 3:09 PM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Report change won't be a quick turn around.

It will likely be next week before you'll get the report changed.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 1:48 PM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

I need to post these asset adjustments today since we have to close first thing in the morning. Are you expecting the report modification to happen today or can I go ahead and post these transactions and fix the report later? Is there anything else I can do to help?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 9:35 AM

**To:** PowerPlant Support; Crescente, Angela; Jim Ogilvie **Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Attachment to Response to KU AG-1 Question No. 201 Page 1852 of 2028 Charnas

Angela called and provided clarification. I still had journal entries on the brain. The report can be modified to include asset\_id information.

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

**Sent:** Tuesday, 05 April, 2011 9:16 AM **To:** 'Crescente, Angela'; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

No, there is no way this report can show the asset\_id information for the entry you are asking about. You could run a query using the CPR Query tool window if you wanted to reconcile the asset adjustments dollars for the

Sunjin Cone PowerPlant Support 770-937-3000

depr group.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Sunjin,

I am OK with the entry including both assets. Is there some way I can modify the report to show what happened by asset?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

**Sent:** Monday, April 04, 2011 5:00 PM **To:** Crescente, Angela; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

### Angela,

The entry for \$ 9,754,171.05 that includes the two assets is a one line transaction due to both assets being in the same depr group, and the entry information is setup to pull from the depr\_ledger table, which is a table where the dollars are by depr group, and it doesn't appear that the setup can be changed to retain asset\_id information.

Sunjin Cone PowerPlant Support 770-937-3000

# Attachment to Response to KU AG-1 Question No. 201 Page 1853 of 2028

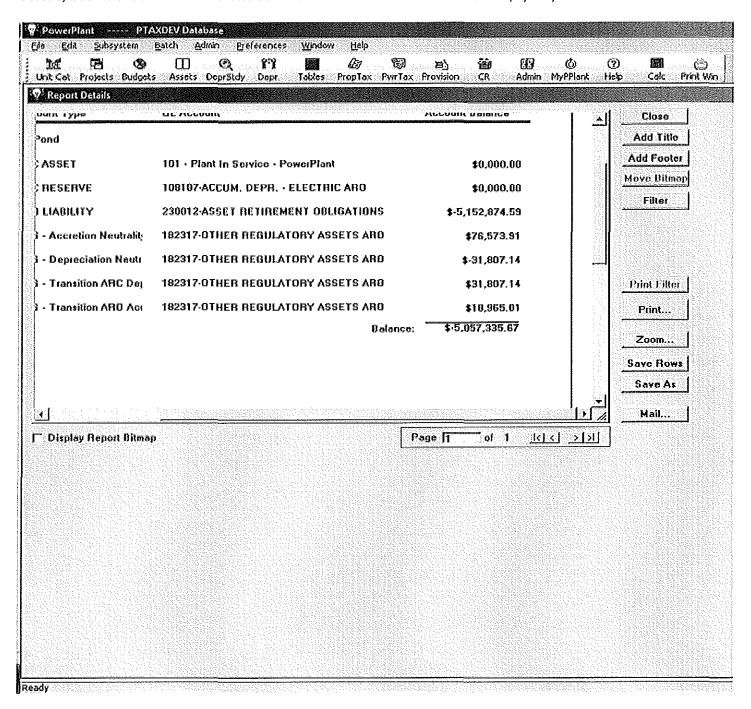
Charnas From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jlm Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

OK, accidentally told a lie (I'm sorry, it's Monday). I kept looking and now I can see where the reg entries fired, but since there was more than one done on LGE, it combined them which makes sense. However, my report does not reflect this activity by asset. Any ideas on how to make that work? I thought it worked before, but I must be mistaken. The other asset was Purc-MC Ash Pond for \$4,696,835.38.



Attachment to Response to KU AG-1 Question No. 201 Page 1854 of 2028 Charnas

Thanks,	Charnas
Angela	
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### Attachment to Response to KU AG-1 Question No. 201 Page 1856 of 2028 Charnas

# Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Tuesday, April 05, 2011 3:09 PM

To:

Crescente, Angela

Subject:

RE: ARO reclass to 182 regulatory entries

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Sent: Tuesday, 05 April, 2011 1:48 PM

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Subject: RE: ARO reclass to 182 regulatory entries

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**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

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Attachment to Response to KU AG-1 Question No. 201 Page 1857 of 2028 Charnas

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

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**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

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Sunjin Cone PowerPlant Support 770-937-3000

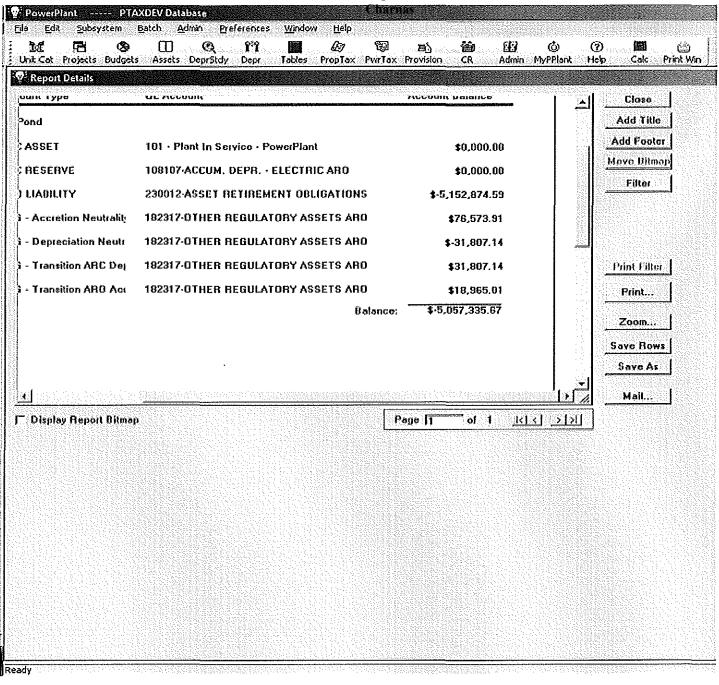
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

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<<li>eq entry rows march test.xlsx>>

Thanks,

Angela

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### Attachment to Response to KU AG-1 Question No. 201 Page 1860 of 2028 Charnas

# Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent:

Tuesday, April 05, 2011 9:35 AM

To:

Cc:

PowerPlant Support; Crescente, Angela; Jim Ogilvie Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

RE: ARO reclass to 182 regulatory entries

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Sunjin Cone **PowerPlant Support** 770-937-3000

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Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

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Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 8:33 AM To: PowerPlant Support; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

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Sent: Monday, April 04, 2011 5:00 PM To: Crescente, Angela; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

Angela,

# Attachment to Response to KU AG-1 Question No. 201 Page 1861 of 2028

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Sunjin Cone PowerPlant Support 770-937-3000

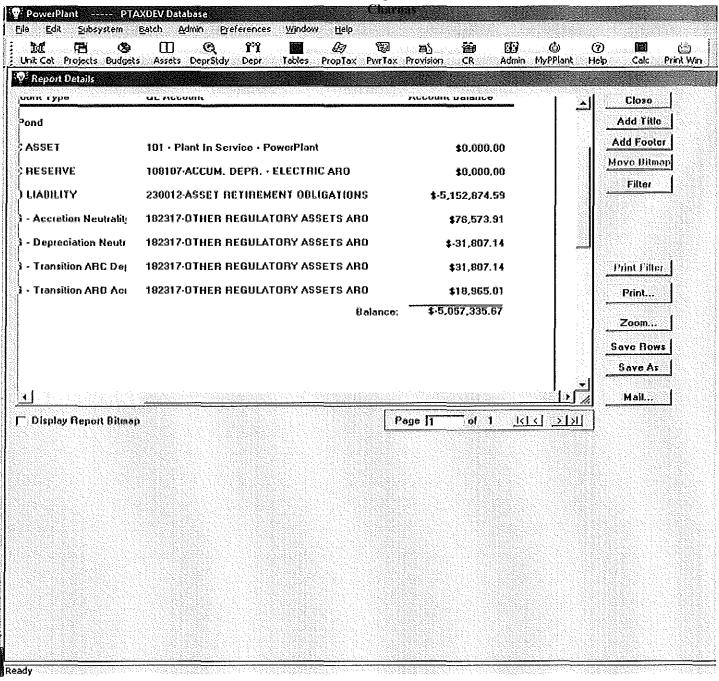
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

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<<li>eq entry rows march test.xlsx>>

Thanks,

Angela

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Attachment to Response to KU AG-1 Question No. 201 Page 1863 of 2028 Charnas

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## Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent: To: Tuesday, April 05, 2011 9:20 AM Crescente, Angela; Jim Ogilvie

Cc: Subject: Wiseman, Sara; Wacker, Diana; Kinder, Debra RE: ARO reclass to 182 regulatory entries

No, there is no way this report can show the asset\_id information for the entry you are asking about.

You could run a query using the CPR Query tool window if you wanted to reconcile the asset adjustments dollars for the depr group.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Sunjin,

I am OK with the entry including both assets. Is there some way I can modify the report to show what happened by asset?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

**Sent:** Monday, April 04, 2011 5:00 PM **To:** Crescente, Angela; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

### Angela,

The entry for \$ 9,754,171.05 that includes the two assets is a one line transaction due to both assets being in the same depr group, and the entry information is setup to pull from the depr\_ledger table, which is a table where the dollars are by depr group, and it doesn't appear that the setup can be changed to retain asset\_id information.

Sunjin Cone PowerPlant Support 770-937-3000

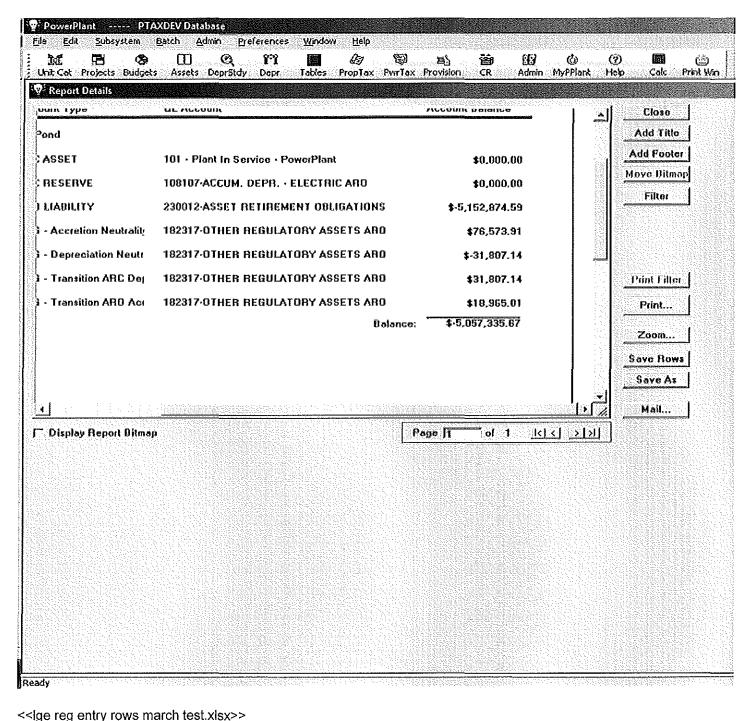
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

OK, accidentally told a lie (I'm sorry, it's Monday). I kept down low I can see where the reg entries fired, but since there was more than one done on LGE, it combined them which makes sense. However, my report does not reflect this activity by asset. Any ideas on how to make that work? I thought it worked before, but I must be mistaken. The other asset was Purc-MC Ash Pond for \$4,696,835.38.



Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1866 of 2028

NOTE: The extension for all E.ON U.S. e-mail address on the standard from @eon-us.com to @lge-ku Please update your address book accordingly.	com.
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NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku Please update your address book accordingly.	.com.
	,,200,100

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Attachment to Response to KU AG-1 Question No. 201 Page 1867 of 2028 Charnas

### Clark, Ed

From:

PowerPlant Support <support@pwrplan.com>

Sent: To:

Monday, April 04, 2011 5:00 PM Crescente, Angela; Jim Ogilvie

Cc:

Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

RE: ARO reclass to 182 regulatory entries

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Sunjin Cone PowerPlant Support 770-937-3000

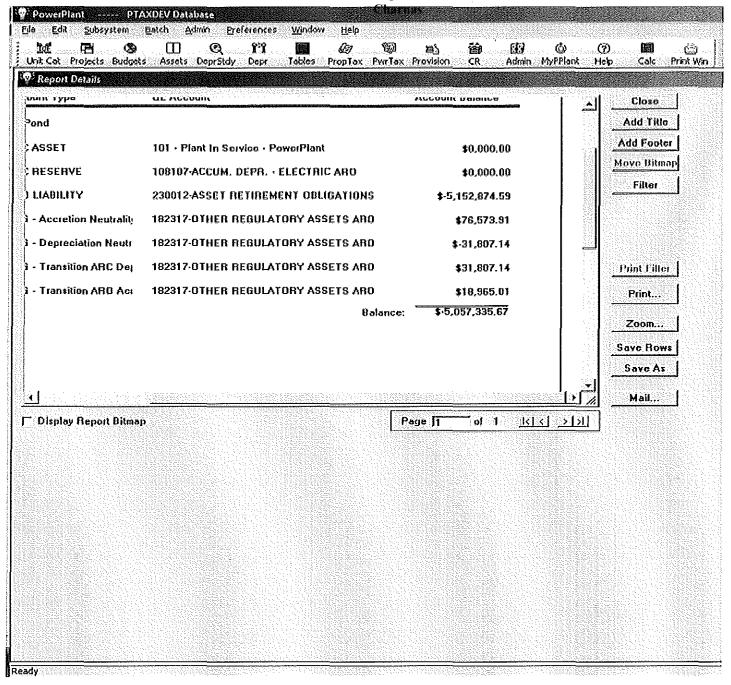
From: Crescente, Angela [mailto:Angela.Crescente@lqe-ku.com]

Sent: Monday, 04 April, 2011 4:11 PM To: PowerPlant Support; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: ARO reclass to 182 regulatory entries

Importance: High

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<<li>eq entry rows march test.xlsx>>

Thanks,

Angela

NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

Attachment to Response to KU AG-1 Question No. 201 Page 1869 of 2028 Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1870 of 2028 Charnas

# Clark, Ed

From:

Crescente, Angela

Sent: To: Monday, April 04, 2011 4:11 PM 'PowerPlant Support'; 'Jim Ogilvie'

Cc:

Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject:

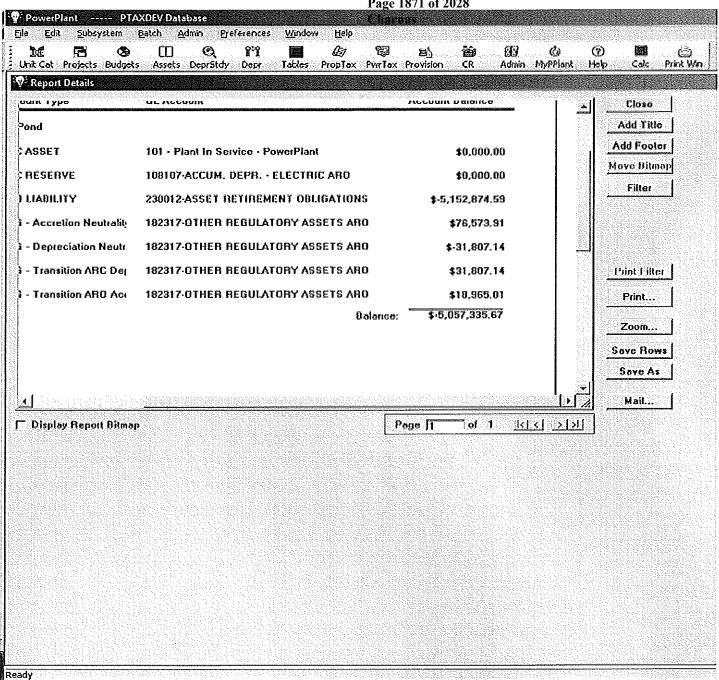
ARO reclass to 182 regulatory entries

Importance:

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Attachment to Response to KU AG-1 Question No. 201 Page 1871 of 2028



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lge reg entry rows march test....

Thanks, Angela

gl_acet_string		gl_account_id gl_posting_mo_yrgl_je_code		entry_name	description	factor description
0100-303-006250-006250-182317-0000-0699-0000-	3,405.45	182317 3/1/2011 00:00:00 ARO	100 Purc-Canal (Retired)-AS8	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(3,405,45)	407401 3/1/2011 00:00:00 ARO	100 Purc-Canal (Retired)-ASB	Accretion Neutrality-LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	24,936,06	182317 3/1/2011 00:00:00 ARO	100 Purc-Canal (Retired)-AS8	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(24,936,06)	407421 3/1/2011 00:00:00 ARO	100 Purc-Canal (Retired)-ASB	Depreciation Neutrolity -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-503-006250-006250-182326-0000-0699-0000-	9,403,16	182326 3/1/2011 00:00:00 ARO	100 Purc-Center GSF UGS (Wells)	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(9,403.16)	407405 3/1/2011 00:00:00 ARO	100 Purc-Center GSF UGS (Wells)	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	7,369.55	182326 3/1/2011 00:00:00 ARO	100 Pure-Center GSF UGS (Wells)	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-131-006250-006250-407426-0000-0699-0000-	(7,369.55)	407426 3/1/2011 00:00:00 ARO	100 Purc-Center GSF UGS (Wells)	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-503-006250-006250-182326-0000-0699-0000-	11.92	182326 3/1/2011 00:00:00 ARO	100 Purc-CityGateDR237900-Dist-AS8	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(12.92)	407406 3/1/2011 00:00:00 ARO	100 Purc-CityGateDR237900-Dist-ASB	Accretion Neutrality-LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	3.79	182326 3/1/2011 00:00:00 ARO	100 Purc-CityGateDR237900-Dist-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-238807-ARO Cost Gas Dist (Eqp)
0100-131-006250-006250-407426-0000-0699-0000-	(3.79)	407426 3/1/2011 00:00:00 ARO	100 Puro-CityGateDR237900-Dist-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-238807-ARO Cost Gas Dist (Eqp)
0100-503-006250-006250-182326-0000-0699-0000-	17.38	182326 3/1/2011 00:00:00 ARO	100 Purc-CityGatePR237900-Dist-AS8	Accretion Neutrality-LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(17.38)	407406 3/1/2011 00:00:00 ARO	100 Pure-CityGatePR237900-Dist-ASB	Accretion Neutrality-LGE-GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	6,44	182326 3/1/2011 00:00:00 ARO	100 Pure-CityGatePR237900-Dist-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-238807-ARO Cost Gas Dist (Eqp)
0100-131-006250-006250-407426-0000-0699-0000-	(6.44)	407426 3/1/2011 00:00:00 ARO	100 Pure-CityGatePR237900-Dist-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-238807-ARO Cost Gas Dist (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	19,251.09	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Ash Pond	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	
0100-111-006250-006250-407401-0000-0699-0000-	(19,251.09)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Ash Pond	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	
0100-303-006250-006250-182317-0000-0699-0000-	(127,481,70)	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Ash Pond	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	127,481.70	407421 3/1/2011 00:00:00 ARO	100 Pure-CR Ash Pond	Depreciation Neutrality - LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	967.27	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Coal Storage	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(967,27)	407401 3/1/2011 00:00:00 ARO	100 Pure-CR Coal Storage	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,603.24	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Coal Storage	Depreciation Neutrality - LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,603.24)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR Coal Storage	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	2,450.14	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Environmental Ponds	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(2,450.14)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Environmental Ponds	Accretion Neutrality -LGE- Eq-Gon	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	4,061.07	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Environmental Ponds	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(4,061,07)	407421 3/1/2011 00:00:00 ARO	100 Purs-CR Environmental Ponds	Depreciation Neutrality-LGE-Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	7,83	182317 3/1/2011 00:00:00 ARO	100 Purc-CR GSU Spare	Accretion Neutrality-LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(7.83)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR GSU Spare	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	32.56	182317 3/1/2011 00:00:00 ARO	100 Purc-CR GSU Spare	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(32,56)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR GSU Spare	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	7.83	182317 3/1/2011 00:00:00 ARO	100 Purc-CR GSU Unit 4	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(7.83)	407401 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 4	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	32,56	182317 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 4	Depreciation Neutrality - LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(32,56)	407421 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 4	Depreciation Neutrality - LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000- 0100-1.11-006250-006250-407401-0000-0699-0000-	7.83 (7.83)	182317 3/1/2011 00:00:00 ARO 407401 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 5 100 Pure-CR GSU Unit 5	Accretion Neutrality -LGE- Eq-Gen Accretion Neutrality -LGE- Eq-Gen	Accretion Expense Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	(7.83) 32.56	182317 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit S	Depreciation Neutrality -LGE- Eq-Gen	ARC Depreciation Expense	<del>-</del>
0100-111-006250-006250-407421-0000-0699-0000-	(32.56)	407421 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 5	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp) 1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	7.83	182317 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 6	Accretion Neutrality -LGE- Ee-Gen	Accretion Expense	1 toe-151707-And cost Steam (eqp)
0100-111-006250-006250-407401-0000-0699-0000-	(7.83)	407401 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 6	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-005250-006250-182317-0000-0699-0000-	32.56	182317 3/1/201100:00:00 ARO	100 Pure-CR GSU Unit 6	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(32.56)	407421 3/1/2011 00:00:00 ARO	100 Pure-CR GSU Unit 6	Depredation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	5,256.65	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Landfill	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1 toe-131707-ARO Cost Steam (¿qp)
0100-111-006250-006250-407401-0000-0699-0000-	(5,256.65)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Landfill		Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	(5,256.65) 8,712.83	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Landfill	Accretion Neutrality -LGE- Eq-Gen Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(8,712.83)	407421 3/1/2011 00:00:00 ARO	100 Pure-CR Landfill	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp) 1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000-	156,77	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Nuclear Sources	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1 tige-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407401-0000-0699-0000-	(156.77)	407401 3/1/2011 00:00:00 ARO	100 Pure-CR Nuclear Sources	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	259,84	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Nuclear Sources	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(259.84)	407421 3/1/2011 00:00:00 ARO	100 Pure-CR Nuclear Sources	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000-	44,44	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Sewage Treatment Plant	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(44,44)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Sewage Treatment Plant	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	73.66	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Sewage Treatment Plant	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(73.66)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR Sewage Treatment Plant	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	3,703.77	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 1 (Retired)-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(3,703.77)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 1 (Retired)-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,604.56	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 1 (Retired)-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,604.56)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 1 (Retired)-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000-	3,489.06	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Unit 2 (Retired)-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1 tot-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407401-0000-0699-0000-	(3,489.06)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 2 (Retired)-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,511.54	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 2 (Retired)-ASB	Depreciation Neutrality -LGE- Gen	ARC Depredation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,511.54)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 2 (Retired)-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	3,931.90	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Unit 3 (Retired)-AS8	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1 102-151707-AND Cost Steam (Edp)
0100-111-006250-006250-407401-0000-0699-0000-	(3,931,90)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 3 (Retired)-AS8	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,703.39	182317 3/1/2011 00:00:00 ARO	100 Puro-CR Unit 3 (Retired)-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0T00-303-000530-000530-T053T1-0000-0033-0000-	2,103.33	TOURST STATEOUTO ON MICO	YOU LAISEN OURS (MERICA) 400	pety control frequency react Oct	And preprecionation expense	r non-removement coer segui (cdb)

# Attachment to Response to KU AG-1 Question No. 201 Page 1873 of 2028 Charnas

0100-111-006250-006250-407421-0000-0699-0000-	(1,703.39)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 3 (Retired)-AS8	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	4,180.16	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Unit 4-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(4,180.16)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 4-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,810.94	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 4-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,810,94)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 4-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	3,020.91	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 5-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(3,020.91)	407401 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 5-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,192.93	182317 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 5-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,192,93)	407421 3/1/2011 00:00:00 ARO	100 Purc-CR Unit 5-AS8	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	3,369.61	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Unit 6-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(3,369.61)	407401 3/1/2011 00:00:00 ARO	100 Pure-CR Unit 6-AS8	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,301,83	182317 3/1/2011 00:00:00 ARO	100 Pure-CR Unit 6-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,301.83)	407421 3/1/2011 00:00:00 ARO	100 Pure-CR Unit 6-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-503-006250-006250-182326-0000-0699-0000-	163.84	182326 3/1/2011 00:00:00 ARO	100 Purc-Doe Run 235300-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(163.84)	407406 3/1/2011 00:00:00 ARO	100 Purc-Doe Run 235300-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	52.04 (52.04)	182326 3/1/2011 00:00:00 ARO	100 Purc-Doe Run 235300-UGS-ASB 100 Purc-Doe Run 235300-UGS-ASB	Depreciation Neutrality -LGE-GAS Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
		407426 3/1/2011 00:00:00 ARO 182326 3/1/2011 00:00:00 ARO				1 LGE-235807-ARO Cost Gas UG Store (E
0100-503-006250-006250-182326-0000-0699-0000-	6,379.95		100 Purc-Doe Run GSF UGS (Wells)	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(6,379,95)		100 Purc-Doe Run GSF UGS (Wells)	Accretion Neutrality -LGE- GAS	Accretion Expense	=
0100-503-006250-006250-182326-0000-0699-0000- 0100-131-006250-006250-407426-0000-0699-0000-	5,000.16	182326 3/1/2011 00:00:00 ARO 407426 3/1/2011 00:00:00 ARO	100 Pure-Doe Run GSF UGS (Wells)	Depreciation Neutrality -LGE-GAS Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E 1 LGE-235807-ARO Cost Gas UG Store (E
0100-131-006250-006250-407426-0000-0699-0000-	(5,000.16) 56,015.11	407426 3/1/2011 00:00:00 ARO 182326 3/1/2011 00:00:00 ARO	100 Purc-Doe Run GSF UGS (Wells)	Accretion Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO COST Gas UG Store (E
0100-131-006250-006250-407406-0000-0699-0000-	(56,015.11)	407406 3/1/2011 00:00:00 ARO	100 Purc-GasMain&ServAbandon-Dist 100 Purc-GasMain&ServAbandon-Dist	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	(5,000,000.00)	182326 3/1/2011 00:00:00 ARO	100 Purc-GasMain&ServAbandon-Dist	ARO Gain Loss -LGE- GAS	Accretion Expense ARO Gain/Loss	1
0100-131-006250-006250-182326-0000-0699-0000-	5,000,000.00	421105 3/1/2011 00:00:00 ARO	100 Purc-Gasiviaincservapandon-Dist	ARO Gain Loss -LGE- GAS ARO Gain Loss -LGE- GAS	ARO Gain/Loss	
0100-503-006250-006250-182326-0000-0699-0000-	4,978,254.27		100 Pure-GasMain&ServAbandon-Dist		ARC Depreciation Expense	1 LGE-238807-ARO Cost Gas Dist (Eqp)
0100-131-006250-006250-407426-0000-0699-0000-	(4,978,254.27)	182326 3/1/2011 00:00:00 ARO 407426 3/1/2011 00:00:00 ARO	100 Purc-GasMain&ServAbandon-Dist	Depreciation Neutrality -LGE-GAS Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-238807-ARO Cost Gas Dist (Eqp)
0100-303-006250-006250-182325-0000-0699-0000-	535.24	182325 3/1/2011 00:00:00 ARO	100 Pure-LGE Dist Subs (66)-ASB	Accretion Neutrality -LGE- Dist	Accretion Expense	1 tige-23-8807-ARO Cost Gais Dist (Eqp)
0100-122-006250-006250-407405-0000-0699-0000-	(535.24)	407405 3/1/2011 00:00:00 ARO	100 Pure-LGE Dist Subs (66)-ASB	Accretion Neutrality -LGE- Dist	Accretion Expense	1
0100-303-006250-006250-182325-0000-0699-0000-	140.09	182325 3/1/2011 00:00:00 ARO	100 Purc-IGE Dist Subs (66)-ASB	Depreciation Neutrality -LGE-DIST	ARC Depreciation Expense	1 LGE-137405-ARO Cost Elec Dist (L/B)
0100-122-006250-006250-407425-0000-0699-0000-	(140.09)	407425 3/1/2011 00:00:00 ARO	100 Purc-LGE Dist Subs (66)-ASB	Depreciation Neutrality -LGE-DIST	ARC Depreciation Expense	1 LGE-137405-ARO Cost Elec Dist (L/B)
0100-303-006250-006250-182318-0000-0699-0000-	64.23	182318 3/1/2011 00:00:00 ARO	100 Purc-LGE Trans Subs (11)-ASB	Accretion Neutrality -LGE- Trans	Accretion Expense	1
0100-121-006250-006250-407402-0000-0699-0000-	(64.23)	407402 3/1/2011 00:00:00 ARO	100 Purc-LGE Trans Subs (11)-ASB	Accretion Neutrality -LGE- Trans	Accretion Expense	1
0100-303-006250-006250-182318-0000-0699-0000-	(3,000.00)	182318 3/1/2011 00:00:00 ARO	100 Purc-LGE Trans Subs (11)-ASB	ARO Gain Loss -LGE-Trans	ARO Gain/Loss	Ť
0100-121-006250-006250-421105-0000-0699-0000-	3.000.00	421105 3/1/2011 00:00:00 ARO	100 Pure-LGE Trans Subs (11)-ASB	ARO Gain Loss -LGE- Trans	ARO Gain/Loss	1
0100-303-006250-006250-182318-0000-0699-0000-	3,000.31	182318 3/1/2011 00:00:00 ARO	100 Pure-LGE Trans Subs (11)-ASB	Depreciation Neutrality -LGE-TRANS	ARC Depreciation Expense	1 LGE-135915-ARO Cost Transm (L/B)
0100-121-006250-006250-407422-0000-0699-0000-	(3,000.31)	407422 3/1/2011 00:00:00 ARO	100 Purc-LGE Trans Subs (11)-ASB	Depreciation Neutrality -LGE-TRANS	ARC Depreciation Expense	1 LGE-135915-ARO Cost Transm (L/B)
0100-503-006250-006250-182326-0000-0699-0000-	43.57	182326 3/1/2011 00:00:00 ARO	100 Purc-Magnolia 235120-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(43,57)	407406 3/1/2011 00:00:00 ARO	100 Purc-Magnolia 235120-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	ī
0100-503-006250-006250-182326-0000-0599-0000-	11.93	182326 3/1/2011 00:00:00 ARO	100 Purc-Magnolla 235120-UGS-ASB	Depreciation Neutrality-LGE-GAS	ARC Depreciation Expense	1 LGE-23S80S-ARO Cost Gas UG Store (L
0100-131-006250-006250-407426-0000-0699-0000-	(11.93)	407426 3/1/2011 00:00:00 ARO	100 Purc-Magnolla 235120-UGS-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235805-ARO Cost Gas UG Store (L
0100-503-006250-006250-182326-0000-0699-0000-	171.52	182326 3/1/2011 00:00:00 ARO	100 Purc-Magnolia 235300-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(171.52)	407406 3/1/2011 00:00:00 ARO	100 Purc-Magnolia 235300-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-005250-006250-182326-0000-0699-0000-	54.48	182326 3/1/2011 00:00:00 ARO	100 Purc-Magnolia 235300-UGS-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-131-006250-006250-407426-0000-0699-0000-	(54.48)	407426 3/1/2011 00:00:00 ARO	100 Purc-Magnolla 235300-UGS-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-503-006250-006250-182326-0000-0699-0000-	20.27	182326 3/1/2011 00:00:00 ARO	100 Purc-Magnolla 235600-UGS-AS8	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(20.27)	407406 3/1/2011 00:00:00 ARO	100 Purc-Magnolla 235600-UG\$-AS8	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	6.11	182326 3/1/2011 00:00:00 ARO	100 Purc-Magnolia 235600-UGS-AS8	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-131-006250-006250-407426-0000-0699-0000-	(6.11)	407426 3/1/2011 00:00:00 ARO	100 Purc-Magnolia 235600-UGS-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-503-006250-006250-182326-0000-0699-0000-	6,572,45	182326 3/1/2011 00:00:00 ARO	100 Purc-Magnolia GSF UGS (Wells)	Accretion Neutrality -LGE- GAS	Accretion Expense	1
01,00-131-006250-006250-407406-0000-0699-0000-	(6,572,45)	407406 3/1/2011 00:00:00 ARO	100 Pure-Magnolia GSF UGS (Wells)	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	5,151,03	182326 3/1/2011 00:00:00 ARO	100 Pure-Magnolla GSF UGS (Wells)	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-131-006250-006250-407426-0000-0599-0000-	(5,151.03)	407426 3/1/2011 00:00:00 ARO	100 Pure-Magnolla GSF UGS (Wells)	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	<ol> <li>LGE-235807-ARO Cost Gas UG Store (E</li> </ol>
0100-303-006250-006250-182325-0000-0699-0000-	1,711.00	182325 3/1/2011 00:00:00 ARO	100 Purc-Manholes-ASB	Accretion Neutrality -LGE- Dist	Accretion Expense	1
0100-122-006250-006250-407405-0000-0699-0000-	(1,711.00)	407405 3/1/2011 00:00:00 ARO	100 Purc-Manholes-ASB	Accretion Neutrality -LGE- Dist	Accretion Expense	1
0100-303-006250-006250-182325-0000-0699-0000-	362,73	182325 3/1/2011 00:00:00 ARO	100 Purc-Manholes-ASB	Depreciation Neutrality -LGE-DIST	ARC Depreciation Expense	1 LGE-137405-ARO Cost Elec Dist (L/B)
0100-122-006250-006250-407425-0000-0699-0000-	(362.73)	407425 3/1/2011 00:00:00 ARO	100 Purc-Manholos-ASB	Depreciation Neutrality-LGE-DIST	ARC Depreciation Expense	1 LGE-137405-ARO Cost Elec Dist (L/B)
01.00-303-006250-006250-182317-0000-0699-0000-	21,518.78	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Ash Pond	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(21,518.78)	407401 3/1/2011 00:00:00 ARO	100 Pure-MC Ash Pond	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	I
0100-303-006250-006250-182317-0000-0699-0000-	(59,701.86)	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Ash Pond	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	59,701.86	407421 3/1/2011 00:00:00 ARO	100 Pure-MC Ash Pond	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000-	37.41	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Chemical Storage	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(37.41)	407401 3/1/2011 00:00:00 ARO	100 Pure-MC Chemical Storage	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1 LCC 121707 ADD C C (C)
0100-303-006250-006250-182317-0000-0699-0000-	25.96	182317 3/1/2011 00:00:00 ARO 407421 3/1/2011 00:00:00 ARO	100 Pure-MC Chemical Storage	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(25,96)		100 Pure-MC Chemical Storage	Depreciation Neutrality -LGE- Gen	* *	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000- 0100-111-006250-006250-407401-0000-0699-0000-	786.60	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Coal Storage 100 Purc-MC Coal Storage	Accretion Neutrality -LGE- Eq-Gen Accretion Neutrality -LGE- Eq-Gen	Accretion Expense Accretion Expense	1
0100-303-006250-006250-407401-0000-0699-0000-	(786.60) 545.91	407401 3/1/2011 00:00:00 ARO 182317 3/1/2011 00:00:00 ARO	100 Purc-MC Coal Storage	Depreciation Neutrality -LGE- Eq-Sen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
5155 565-656250-666250-162517-6666-6655-66600	540.04		Loc 1 are the soul storage		. The engineering experience	_ cos man or rate desire second (refb)

# Attachment to Response to KU AG-1 Question No. 201 Page 1874 of 2028 Charnas

0100-111-006250-006250-407421-0000-0699-0000-	(E4E 04)	407404 3 is incre 00,00.00 +00	100 0 110 0 1 0	Consideration Normality 1888 Soc.	NOT Burned of A Forest	4 155 404707 400 0 4 5 75>
0100-303-006250-006250-407421-0000-0699-0000-	(545.91) 2,049.41	407421 3/1/2011 00:00:00 ARO 182317 3/1/2011 00:00:00 ARO	100 Purc-MC Coal Storage 100 Purc-MC Environmental Ponds	Depreciation Neutrality-LGE- Gen Accretion Neutrality-LGE- Eq-Gen	ARC Depreciation Expense Accretion Expense	1 LGE-131707-ARO Cost Steam (Eqp) 1
0100-111-006250-006250-407401-0000-0699-0000-	(2,049.41)	407401 3/1/2011 00:00:00 ARO	100 Purc-MC Environmental Ponds	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,422.32	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Environmental Ponds	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,422.32)	407421 3/1/2011 00:00:00 ARO	100 Purc-MC Environmental Ponds	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	8.02	182317 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Spare	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(8.02)	407401 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Spare	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	ī
0100-303-006250-006250-182317-0000-0699-0000-	8.50	182317 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Spare	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(8.50)	407421 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Spare	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000-	8.44	182317 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 1	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(8.44)	407401 3/1/2011 00:00:00 ARO	100 Pure-MC GSU Unit 1	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	27.44	182317 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 1	Depredation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(27.44)	407421 3/1/2011 00:00:00 ARO	100 Pure-MC GSU Unit 1	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	8.63	182317 3/1/2011 00:00:00 ARO	100 Pure-MC GSU Unit 2	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(8.63)	407401 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 2	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	23.73	182317 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 2	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(23.73)	407421 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 2	Depreciation Neutrality -LGE- Gen	ARC Depredation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	8,72	182317 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 3	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(8.72)	407401 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 3	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	14.45	182317 3/1/2011 00:00:00 ARO	100 Purc-MC GSU Unit 3	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(14.45)	407421 3/1/2011 00;00:00 ARO	100 Purc-MC GSU Unit 3	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	8.02	182317 3/1/2011 00:00:00 ARO	100 Pure-MC GSU Unit 4	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(8.02)	407401 3/1/2011 00:00:00 ARO	100 Pure-MC GSU Unit 4	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	8.50	182317 3/1/2011 00:00:00 ARO	100 Pure-MC GSU Unit 4	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(8.50)	407421 3/1/2011 00:00:00 ARO	100 Pure-MC GSU Unit 4	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	3,865.87	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Landfill	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(3,865.87)	407401 3/1/2011 00:00:00 ARO	100 Pure-MC Landfill	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	(862,947,52)	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Landfill	ARO Gain Loss -LGE- Eq-Gen	ARO Gain/Loss	1
0100-111-006250-006250-421105-0000-0699-0000-	862,947.52	421105 3/1/2011 00:00:00 ARO	100 Pure-MC Landfill	ARO Gain Loss -LGE- Eq-Gen	ARO Gain/Loss	1
0100-303-006250-006250-182317-0000-0699-0000-	833,065.10	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Landfill	Depreciation Neutrality-LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(833,065.10)	407421 3/1/2011 00:00:00 ARO	100 Purc-MC Landfill	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	57.17	182317 3/1/2011 00:00:00 ARO 407401 3/1/2011 00:00:00 ARO	100 Pure-MC Nuclear Sources	Accretion Neutrality - LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000- 0100-303-006250-006250-182317-0000-0699-0000-	(S7.17) 39.67	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Nuclear Sources 100 Purc-MC Nuclear Sources	Accretion Neutrality -LGE- Eq-Gen Depreciation Neutrality -LGE- Gen	Accretion Expense ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
	(39.67)	407421 3/1/2011 00:00:00 ARO	100 Pure-MC Nuclear Sources	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000- 0100-303-006250-006250-182317-0000-0699-0000-	2.74	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Oil Storage	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(2.74)	407401 3/1/2011 00:00:00 ARO	100 Pure-MC Oil Storage	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1.90	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Oil Storage	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1.90)	407421 3/1/2011 00:00:00 ARO	100 Purc-MC Oil Storage	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	3.747.25	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 1-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(3,747.25)	407401 3/1/2011 00:00:00 ARO	100 Purc-MC Unit 1-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	i
0100-303-006250-006250-182317-0000-0699-0000-	1,359.47	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Unit 1-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,359,47)	407421 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 1-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000-	3,267.65	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 2-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(3,267.65)	407401, 3/1/2011 00:00:00 ARO	100 Purc-MC Unit 2-AS8	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,185.47	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 2-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,185.47)	407421 3/1/2011 00:00:00 ARO	100 Purc-MC Unit 2-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-303-006250-006250-182317-0000-0699-0000-	1,364.06	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Unit 3-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-005250-006250-407401-0000-0699-0000-	(1,364.06)	407401 3/1/2011 00:00:00 ARO	100 Purc-MC Unit 3-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	411.29	182317 3/1/2011 00:00:00 ARO	100 Purc-MC Unit 3-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(411.29)	407421 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 3-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	2,026.60	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 4-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(2,026,60)	407401 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 4-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	611.06	182317 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 4-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(611.06)	407421 3/1/2011 00:00:00 ARO	100 Pure-MC Unit 4-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-503-006250-006250-182326-0000-0699-0000-	61.78	182326 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 235120-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(61.78)	407406 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 235120-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	16.91	182326 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh 235120-UGS-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235805-ARO Cost Gas UG Store (L
0100-131-006250-006250-407426-0000-0699-0000-	(16.91)	407426 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 235120-UGS-AS8	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235805-ARO Cost Gas UG Store (L 1
0100-503-006250-006250-182326-0000-0699-0000-	128.85	182326 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh 235300-UGS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	•
	(128.85)	407406 3/1/2011 00:00:00 ARO 182326 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 235300-UGS-ASB	Accretion Neutrality -LGE-GAS	Accretion Expense	1 155 725057 ADD Some Shirt 155 Server 15
03:00-503-006250-006250-182326-0000-0699-0000- 03:00-13:1-006250-006250-407426-0000-0699-0000-	40,92	182326 3/1/2011 00:00:00 ARO 407426 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh 235300-UGS-ASB 100 Purc-Muldraugh 235300-UGS-ASB	Depredation Neutrality -LGE-GAS Depredation Neutrality -LGE-GAS	ARC Depreciation Expense ARC Depreciation Expense	<ol> <li>LGE-23S807-ARO Cost Gas UG Store (E</li> <li>LGE-23S807-ARO Cost Gas UG Store (E</li> </ol>
0100-131-006250-006250-407426-0000-0699-0000-	(40,92) 89,64	182326 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 235500-065-ASB	Accretion Neutrality -LGE-GAS	Accretion Expense	1 COC-X3300/-MNO COST ONS OR 30016 (E
0100-503-006250-006250-182326-0000-0699-0000-	(89.64)	407406 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 235600-0GS-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	27.03	182326 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 235600-UGS-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARQ Cost Gas UG Store (E
0100-03-006250-006250-182326-0000-0699-0000-	(27,03)	407426 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh 235600-UGS-ASB	Depreciation Neutrality -LGE-GAS	ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-503-006250-006250-182326-0000-0699-0000-	13.83	182326 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh 237520-Dist-ASB	Accretion Neutrality -LGE- GAS	Accretion Expense	1 132-253807-MNO COST GOS DO STOTE (E
			W			

# Attachment to Response to KU AG-1 Question No. 201 Page 1875 of 2028 Charnas

0100-131-006250-006250-407406-0000-0699-0000-	(13.83)	407406 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh 23752	2-Dist-ASB Accretion Neutrality -LGE- GAS	Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	6.14	182326 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh 23752		ARC Depreciation Expense	1 LGE-238805-ARO Cost Gas Dist (L/8)
0100-131-005250-006250-407426-0000-0699-0000-	(6.14)	407426 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh 23752		ARC Depreciation Expense	1 LGE-238805-ARO Cost Gas Dist (L/8)
0100-503-006250-006250-182326-0000-0699-0000-	2,573.48	182326 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh GSF U		Accretion Expense	1
0100-131-006250-006250-407406-0000-0699-0000-	(2,573.48)	407406 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh GSF U		Accretion Expense	1
0100-503-006250-006250-182326-0000-0699-0000-	2,016,91	182326 3/1/2011 00:00:00 ARO	100 Purc-Muldraugh GSF U		ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-131-006250-006250-407426-0000-0699-0000-	(2,016.91)	407426 3/1/2011 00:00:00 ARO	100 Pure-Muldraugh GSF U		ARC Depreciation Expense	1 LGE-235807-ARO Cost Gas UG Store (E
0100-303-006250-006250-182317-0000-0699-0000-	483.27	182317 3/1/2011 00:00:00 ARO	100 Pure-Ohio Falls-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(483.27)	407401 3/1/2011 00:00:00 ARO	100 Purc-Ohio Falls-ASB	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000- 0100-111-006250-006250-407421-0000-0699-0000-	145,71 (145,71)	182317 3/1/2011 00:00:00 ARO 407421 3/1/2011 00:00:00 ARO	100 Purc-Ohio Falls-ASB 100 Purc-Ohio Falls-ASB	Deprodation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-133707-ARO Cost Hydro Prod (Eqp
0100-303-006250-006250-182317-0000-0699-0000-	9,946.08	407421 3/1/2011 00:00:00 ARO 182317 3/1/2011 00:00:00 ARO	100 Purc-Paddy's Run-ASB	Depreciation Neutrality -LGE- Gen Accretion Neutrality -LGE- Eq-Gen	ARC Depreciation Expense Accretion Expense	1 LGE-133707-ARO Cost Hydro Prod (Eqp 1
0100-111-006250-006250-407401-0000-0699-0000-	(9,946.08)	407401 3/1/2011 00:00:00 ARO	100 Purc-Paddy's Run-AS8	Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	72,829.13	182317 3/1/2011 00:00:00 ARO	100 Purc-Paddy's Run-ASB	Depreciation Neutrality -LGE- Gen	ARC Depredation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(72,829.13)	407421 3/1/2011 00:00:00 ARO	100 Purc-Paddy's Run-ASB	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-503-006250-006250-182326-0000-0699-0000-	45.92	182326 3/1/2011 00:00:00 ARO	100 Pure-Riggs June 235120		Accretion Expense	1
0100-131-005250-006250-407406-0000-0699-0000-	(45.92)	407406 3/1/2011 00:00:00 ARO	100 Pure-Riggs June 235120		Accretion Expense	ī
0100-503-006250-006250-182326-0000-0699-0000-	12.57	182326 3/1/2011 00:00:00 ARO	100 Pure-Riggs June 235120		ARC Depreciation Expense	1 LGE-23580S-ARO Cost Gas UG Store (L
0100-131-006250-006250-407426-0000-0699-0000-	(12.57)	407426 3/1/2011 00:00:00 ARO	100 Pure-Riggs June 235120		ARC Depreciation Expense	1 LGE-235805-ARO Cost Gas UG Store (L
0100-131-006250-006250-411157-0000-0699-0000-	127.79	411157 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG		Accretion Expense	0.29
0100-141-006250-006250-411157-0000-0699-0000-	(127.79)	411157 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPin-ASB Accretion -LGE-Common Split	Accretion Expense	0.29
0100-122-006250-006250-411157-0000-0699-0000-	345.49	411157 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPin-ASB Accretion -LGE-Common Split	Accretion Expense	0.71
0100-141-006250-006250-411157-0000-0699-0000-	(345.49)	411157 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPin-ASB Accretion -LGE-Common Split	Accretion Expense	0.71
0100-703-006250-006250-182327-0000-0699-0000-	345.49	182327 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPin-ASB Accretion Neutrality -LGE-Comm/Elec	Accretion Expense	0.71
0100-122-006250-006250-407407-0000-0699-0000-	(345.49)	407407 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPin-ASB Accretion Neutrality -LGE-Comm/Elec	Accretion Expense	0.71
0100-703-006250-006250-182327-0000-0699-0000-	127.79	182327 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPin-ASB Accretion Neutrality -LGE-Comm/Gas	Accretion Expense	0.29
0100-131-006250-006250-407407-0000-0699-0000-	(127.79)	407407 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPin-ASB Accretion Neutrality -LGE-Comm/Gas	Accretion Expense	0.29
0100-703-006250-006250-182327-0000-0699-0000-	121.91	182327 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG	enPln-ASB Depreciation Neutrality - LGE-COMM-E	ARC Depreciation Expense	0.71 LGE-339915-ARO Cost Common (L/B)
0100-122-006250-006250-407427-0000-0699-0000-	(121.91)	407427 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG		ARC Depreciation Expense	0.71 LGE-339915-ARO Cost Common (L/B)
0100-703-006250-006250-182327-0000-0699-0000-	49,79	182327 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-ComG		ARC Depreciation Expense	0.29 LGE-339915-ARO Cost Common (L/B)
0100-131-005250-006250-407427-0000-0699-0000-	(49.79)	407427 3/1/2011 00:00:00 ARO	100 Purc-Seventh&O-Com@		ARC Depreciation Expense	0.29 LGE-339915-ARO Cost Common (L/8)
0100-303-006250-006250-182317-0000-0699-0000-	30,484.93	182317 3/1/2011 00:00:00 ARO		Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(30,484.93)	407401 3/1/2011 00:00:00 ARO		Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	21,157.06	182317 3/1/2011 00:00:00 ARO	100 Purc-TC Ash Pond	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(21,157.06)	407421 3/1/2011 00:00:00 ARO	100 Purc-TC Ash Pond	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	50,59	182317 3/1/2011 00:00:00 ARO	100 Purc-TC Chemical Store		Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000- 0100-303-006250-006250-182317-0000-0699-0000-	(50.59) 35.11	407401 3/1/2011 00:00:00 ARO	100 Purc-TC Chemical Store 100 Purc-TC Chemical Store		Accretion Expense ARC Depreciation Expense	<del>-</del>
0100-111-006250-006250-407421-0000-0699-0000-		182317 3/1/2011 00:00:00 ARO 407421 3/1/2011 00:00:00 ARO	100 Purc-TC Chemical Store		ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp) 1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	(35.11) 1,219.23	182317 3/1/2011 00:00:00 ARO		Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1 1
0100-111-006250-006250-407401-0000-0699-0000-	(1,219.23)	407401 3/1/2011 00:00:00 ARO		Accretion Neutrality-LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	846.16	182317 3/1/2011 00:00:00 ARO		Depreciation Neutrality-LGE-Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(846.16)	407421 3/1/2011 00:00:00 ARO	100 Purc-TC Coal Storage	Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	1,537.06	182317 3/1/2011 00:00:00 ARO	100 Purc-TC Environmental		Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(1,537.06)	407401 3/1/2011 00:00:00 ARO	100 Puro-TC Environmental		Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	1,066.74	182317 3/1/2011 00:00:00 ARO	100 Purc-TC Environmental		ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Egp)
0100-111-006250-006250-407421-0000-0699-0000-	(1,066.74)	407421 3/1/2011 00:00:00 ARO	100 Purc-TC Environmental	Ponds Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	59.35	182317 3/1/2011 00:00:00 ARO	100 Purc-TC Nuclear Source	s Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(69.35)	407401 3/1/2011 00:00:00 ARO	100 Purc-TC Nuclear Source		Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	48.13	182317 3/1/2011 00:00:00 ARO	100 Purc-TC Nuclear Source	s Deprodation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(48.13)	407421 3/1/2011 00:00:00 ARO			ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	55.60	182317 3/1/2011 00:00:00 ARO			Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(55.60)	407401 3/1/2011 00:00:00 ARO			Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	38.59	182317 3/1/2011 00:00:00 ARO			ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-111-006250-006250-407421-0000-0699-0000-	(38.59)	407421 3/1/2011 00:00:00 ARO			ARC Depreciation Expense	1 LGE-131707-ARO Cost Steam (Eqp)
0100-303-006250-006250-182317-0000-0699-0000-	179,38	182317 3/1/2011 00:00:00 ARO		Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-111-006250-006250-407401-0000-0699-0000-	(179.38)	407401 3/1/2011 00:00:00 ARO		Accretion Neutrality -LGE- Eq-Gen	Accretion Expense	1
0100-303-006250-006250-182317-0000-0699-0000-	48.22	182317 3/1/2011 00:00:00 ARO		Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-134705-ARO Cost Other Prod (L/B
0100-111-006250-006250-407421-0000-0699-0000-	(48.22)	407421 3/1/2011 00:00:00 ARO		Depreciation Neutrality -LGE- Gen	ARC Depreciation Expense	1 LGE-134705-ARO Cost Other Prod (L/B
0100-141-006250-006250-404401-0000-0698-0000-	(117,727,42)		R EXPENSE 100	Alloc Amort to E/G by Product - #1	Depreciation Expense	0.33 LGE-330310-CCS Software
0100-141-006250-006250-404401-0000-0698-0000-	(93,113.18)	404401 3/1/2011 00:00:00 DEPR		Alloc Amort to E/G by Product - #1	Depreciation Expense	0,33 LGE-330300-Misc Intang Plant-Softwa
0100-111-006250-006250-404402-0000-0698-0000-	117,727.42		R EXPENSE 100	Alloc Amort to E/G by Product - #1	Depreciation Expense	0.33 LGE-330310-CCS Software
0100-111-006250-006250-404402-0000-0698-0000- 0100-141-006250-006250-404401-0000-0698-0000-	93,113.18 (8,464.83)	404402 3/1/2011 00:00:00 DEPR 404401 3/1/2011 00:00:00 DEPR		Alloc Amort to E/G by Product - #1 Alloc Amort to E/G by Product - #2	Depreciation Expense Depreciation Expense	0.33 LGE-330300-Misc Intang Plant-Softwa 0.03 LGE-330300-Misc Intang Plant-Softwa
				Alloc Amort to E/G by Product - #2 Alloc Amort to E/G by Product - #2	· ·	0.03 LGE-330300-Misc Intang Plant-Softwa 0.03 LGE-330300-Misc Intang Plant-Softwa
0100-121-006250-006250-404401-0000-0698-0000-	8,464.83 10,702.49	404401 3/1/2011 00:00:00 DEPR 404401 3/1/2011 00:00:00 DEPR		Alloc Amort to E/G by Product - #2 Alloc Amort to E/G by Product - #2	Depreciation Expense Depreciation Expense	0.03 LGE-330300-Misc Intang Plant-Softwa 0.03 LGE-330310-CCS Software
0100-121-006250-006250-404401-0000-0698-0000- 0100-141-006250-006250-404401-0000-0698-0000-	(10,702.49)	404401 3/1/2011 00:00:00 DEPR 404401 3/1/2011 00:00:00 DEPR		Alloc Amort to E/G by Product - #2 Alloc Amort to E/G by Product - #2	Depreciation Expense Depreciation Expense	0.03 LGE-330310-CCS Software
0100-122-006250-006250-404401-0000-0698-0000-	124,862,41	404401 3/1/2011 00:00:00 DEPF		Alloc Amort to E/G by Product - #3	Depreciation Expense	0.35 LGE-330310-CCS Software
		, _ , _ ,		· · · · · · · · · · · · · · · · · · ·		

# Attachment to Response to KU AG-1 Question No. 201 Page 1876 of 2028 Charnas

0100-122-006250-005250-404401-0000-0698-0000-	98.756.41	404401 3/1/2011 00:00:00	NEDR EYDENSE	100	Alloc Amort to E/G by Produ	ct - #3 Depreciation Expense	0.35 LGE-330300-Misc Intang Plant-Softwa
0100-141-006250-006250-404401-0000-0698-0000-	(124,862,41)	404401 3/1/2011 00:00:00		100	Alloc Amort to E/G by Produ		0.35 LGE-330310-CCS Software
0100-141-006250-006250-404401-0000-0698-0000-	(98,756,41)	404401 3/1/2011 00:00:00		100	Alloc Amort to E/G by Produ		0.35 LGE-330300-Misc Intang Plant-Softwa
0100-131-006250-006250-404301-0000-0698-0000-	59,253.84	404301 3/1/2011 00:00:00		100	Alloc Amort to E/G by Produ		0.21 LGE-330300-Misc Intang Plant-Softwa
0100-131-006250-006250-404301-0000-0698-0000-	74,917,4S	404301 3/1/2011 00:00:00	DEPR EXPENSE	100	Alloc Amort to E/G by Produ		0.21 LGE-330310-CCS Software
0100-141-006250-006250-404401-0000-0698-0000-	(59,253.84)	404401 3/1/2011 00:00:00	DEPR EXPENSE	100	Alloc Amort to E/G by Produ	ct #4 Depreciation Expense	0.21 LGE-330300-Misc Inteng Plant-Softwa
0100-141-006250-006250-404401-0000-0698-0000-	(74,917.45)	404401 3/1/2011 00:00:00	DEPR EXPENSE	100	Alloc Amort to E/G by Produ	ct - #4 Depreciation Expense	0.21 LGE-330310-CCS Software
0100-303-006250-006250-108799-0000-0699-0000-	(9,754,171,05)	108799 3/1/2011 00:00:00	ARO	100	ARC Asset Adjustment - LGE	GEN ARC Adjustment	1 LGE-131707-ARO Cost Steam (Egp)
0100-350-006250-006250-182317-0000-0699-0000-	9,754,171.05	182317 3/1/2011 00:00:00	ARO	100	ARC Asset Adjustment - LGE	GEN ARC Adjustment	1 LGE-131707-ARO Cost Steam (Eqp)
0100-131-006250-006250-403311-0000-0697-0000-	49.79	403311 3/1/2011 00:00:00	DEPR EXPENSE	100	Depreciation LGE - Common	S Depreciation Expense	0.29 LGE-339915-ARO Cost Common (L/B)
0100-141-006250-006250-403311-0000-0697-0000-	(49.79)	403311 3/1/2011 00:00:00	DEPR EXPENSE	100	Depreciation LGE - Common	S Depreciation Expense	0.29 LGE-339915-ARO Cost Common (L/B)
0100-122-006250-006250-403311-0000-0697-0000-	121.91	403311 3/1/2011 00:00:00		100	Depreciation LGE - Common		0,71 LGE-339915-ARO Cost Common (i/8)
0100-141-006250-006250-403311-0000-0697-0000-	(121.91)	403311 3/1/2011 00:00:00		100	Depreciation LGE - Common		0.71 LGE-339915-ARO Cost Common (L/8)
0100-303-002500-022810-151060-0000-0697-0101-CRFUEL	4,580.41	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 4	Depreciation Expense	1 LGE-131200-Cane Run Rail Cars - Bol
0100-303-006250-006250-151060-0000-0697-0101-	(4,580.41)	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 4	Depreciation Expense	<ol> <li>LGE-131200-Cane Run Rail Cars - Bol</li> </ol>
0100-303-002500-022810-151060-0000-0697-0101-CRFUEL	(650.77)	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 4A	Salvege Depreciation Expense	1 LGE-131200-Cane Run Rail Cars - Boi
0100-303-006250-006250-151060-0000-0697-0101-	650.77	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 4A	Salvage Depreciation Expense	1 LGE-131200-Cane Run Rail Cars - Boi
0100-303-002500-022810-151060-0000-0697-0201-MCFUE 0100-303-006250-006250-151060-0000-0697-0201-	9,018.58	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 5	Depreciation Expense	1 LGE-131200-Mill Creek Rall Cars Bol
0100-303-002500-0022810-151060-0000-0697-0201-MCFUE	(9,018.58) (1,284.84)	151060 3/1/2011 00:00:00		100 100	LGE Depr - Fuel System - 5	Depreciation Expense	1 LGE-131200-Mill Creek Rail Cars Bol
0100-303-006250-006250-151060-0000-0697-0201-4402-0	1,284,84	151060 3/1/2011 00:00:00 151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 5A LGE Depr - Fuel System - 5A	Salvage Depreciation Expense Salvage Depreciation Expense	1 LGE-131200-Mill Creek Rail Cars Boi 1 LGE-131200-Mill Creek Rail Cars Boi
0100-303-002500-022810-151060-0000-0697-0201-MCFUE	1,676.69	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 6	Depreciation Expense	1 LGE-131200-Will Creek Locomotives B
01.00-303-006250-006250-151060-0000-0697-0201-	(1,676.69)	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 6	Depreciation Expense	1 LGE-131200-Will Creek Locomotives B
0100-303-002500-022810-151060-0000-0697-0201-MCFUE	(194.25)	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 6A	Salvage Depreciation Expense	1 LGE-131200-Mill Creek Locomotives B
0100-303-006250-006250-151060-0000-0697-0201-	194,25	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 6A		1 LGE-131200-Mill Creek Locomotives B
0100-303-006250-006250-151061-0000-0697-0473-	5,012.63	151061 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 7	Depreciation Expense	1 LGE-134200-TRIMBLE CT PIPELINE FUEL
0100-303-006250-006250-151061-0000-0697-0473-	(5,012.63)	151061 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 7	Depreciation Expense	1 LGE-134200-TRIMBLE CT PIPELINE FUEL
0100-303-006250-006250-151061-0000-0697-0473-	299.76	151061 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 7A		1 LGE-134200-TRIMBLE CT PIPELINE FUEL
0100-303-006250-006250-151061-0000-0697-0473-	(299,76)	151061 3/1/2011 00:00:00	DEPR EXPENSE	100	LGE Depr - Fuel System - 7A	COR Expense	1 LGE-134200-TRIMBLE CT PIPELINE FUEL
0100-303-002500-022810-151060-0000-0697-0101-CRFUEL	131.88	151060 3/1/2011 00:00:00	DEPR EXPENSE	100	LGE Depr - Fuel System - 8	Depredation Expense	1 LGE-131200-Cane Run Locomotives - B
0100-303-006250-006250-151060-0000-0697-0101-	(131.88)	151060 3/1/2011 00:00:00	DEPR EXPENSE	100	LGE Depr + Fuel System + 8	Depreciation Expense	1, LGE-131200-Cane Run Locomotives - B
0100-303-002500-022810-151060-0000-0697-0101-CRFUEL	(17.18)	151060 3/1/2011 00:00:00	DEPR EXPENSE	100	LGE Depr - Fuel System - 8A	Salvage Depredation Expense	1 LGE-131200-Cane Run Locomotives - B
0100-303-006250-006250-151060-0000-0697-0101-	17.18	151060 3/1/2011 00:00:00		100	LGE Depr - Fuel System - 8A		1 LGE-131200-Cane Run Locomotives - B
0100-501-006250-006250-108216-0000-0697-0000-	1,537.16	108216 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GAS (2		<ol> <li>LGE-235250- KY AROP Gas Stor UG</li> </ol>
0100-501-006250-006250-108216-0000-0697-0000-	180.90	108216 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GAS (2		1 LGE-235250- IN AROP Gas Stor UG
0100-501-006250-006250-254016-0000-0697-0000-	(1,537.16)	254016 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GAS (2		1 LGE-23S250- KY AROP Gas Stor UG
0100-501-006250-006250-254016-0000-0697-0000-	(180.90)	254016 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GAS (2		1 LGE-235250- IN AROP Gas Stor UG
0100-301-006250-006250-108115-0000-0697-0000-	476,78	108115 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (1		1 LGE-131101-AROP CR 6 Struct & Impr
0100-301-006250-006250-108115-0000-0697-0000- 0100-301-006250-006250-108115-0000-0697-0000-	22.83 103.40	108115 3/1/2011 00:00:00 108115 3/1/2011 00:00:00		100 100	PCOR - REG LIAB LGE GEN () PCOR - REG LIAB LGE GEN ()		1 LGE-131101-AROP MC 1 Struct & Impr
	785.93	****		100	•		1 LGE-131101-AROP MC 3 Struct & Impr
0100-301-006250-006250-108115-0000-0697-0000-	1,365,67	108115 3/1/2011 00:00:00 108115 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN () PCOR - REG LIAB LGE GEN ()		1 LGE-131101-AROP MC 4 Struct & Impr 1 LGE-131101-AROP TC 1 Struct & Impr
0100-301-006250-006250-254014-0000-0697-0000-	(476.78)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131101-AROP CR 6 Struct & Impr
0100-301-006250-006250-254014-0000-0697-0000-	(22.83)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (:		1 LGE-131101-AROP MC 1 Struct & Impr
0100-301-006250-006250-254014-0000-0697-0000-	(103.40)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131101-AROP MC3 Struct & Impr
0100-301-006250-006250-254014-0000-0697-0000-	(785.93)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131101-AROP MC 4 Struct & Impr
01.00-301-006250-006250-254014-0000-0597-0000-	(1,365,67)	254014 3/1/2011 00:00:00	ARO	100	PCOR - REG LIAB LGE GEN (:	(31101) COR Expense	1 LGE-131101-AROP TC 1 Struct & Impr
0100-301-006250-006250-108116-0000-0697-0000-	264.56	108116 3/1/2011 00:00:00	ARO	100	PCOR - REG LIAB LGE GEN (	312/315) COR Expense	1 LGE-131201-AROP MC3 Boiler Plt Equp
0100-301-006250-006250-108116-0000-0697-0000-	257.40	108116 3/1/2011 00:00:00	ARO	100	PCOR - REG LIAB LGE GEN (	312/315) COR Expense	1 LGE-131201-AROP MC4 SO2 Boiler Plt
0100-301-006250-006250-108116-0000-0697-0000-	510.18	108116 3/1/2011 00:00:00	ARO	100	PCOR - REG LIAB LGE GEN (	312/315) COR Expense	1 LGE-131501-AROP Trimble Unit 1 Acc
0100-301-006250-006250-108116-0000-0697-0000-	133.32	108116 3/1/2011 00:00:00	ARO	100	PCOR - REG LIAB LGE GEN (	312/315) COR Expense	1 LGE-131501-AROP Cane Run 4 Acc
0100-301-006250-006250-108116-0000-0597-0000-	62.49	108116 3/1/2011 00:00:00	ARO	100	PCOR - REG LIAB LGE GEN (	312/315) COR Expense	1 LGE-131501-AROP Cane Run S Acc
0100-301-006250-006250-108116-0000-0697-0000-	863.48	108116 3/1/2011 00:00:00	ARO	100	PCOR - REG LIAB LGE GEN (		<ol> <li>LGE-131S01-AROP Cane Run 6 Acc</li> </ol>
0100-301-006250-006250-108116-0000-0697-0000-	198.11	108116 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP MIII Creek 1 Acc
0100-301-006250-006250-108116-0000-0697-0000-	251,65	108116 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP Mill Creek 2 Acc
0100-301-005250-006250-108116-0000-0697-0000-	260.81	108116 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN ()		1 LGE-131501-AROP Mill Creek 3 Acc
0100-301-006250-006250-108116-0000-0697-0000-	525,99	108116 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP Mill Creek 4 Acc
0100-301-006250-006250-254014-0000-0697-0000- 0100-301-006250-006250-254014-0000-0697-0000-	(264.56) (257.40)	254014 3/1/2011 00:00:00 254014 3/1/2011 00:00:00		100 100	PCOR - REG LIAB LGE GEN () PCOR - REG LIAB LGE GEN ()		<ol> <li>LGE-131201-AROP MC3 Boller Pit Equp</li> <li>LGE-131201-AROP MC4 SO2 Boller Pit</li> </ol>
	(510,18)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (; PCOR - REG LIAB LGE GEN (;		1 LGE-131201-AROP Trimble Unit 1 Acc
0100-301-006250-006250-254014-0000-0697-0000- 0100-301-006250-006250-254014-0000-0697-0000-	(133.32)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP Cane Run 4 Acc
0100-301-006250-006250-254014-0000-0697-0000-	(133.32) (62.49)	254014 3/1/2011 00:00:00 254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 1GE-131501-AROP Cane Run 4 Acc
0100-301-006250-006250-254014-0000-0697-0000-	(863,48)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP Cane Run 6 Acc
0100-301-006250-006250-254014-0000-0697-0000-	(198.11)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP MIII Creek 1 Acc
0100-301-006250-006250-254014-0000-0697-0000-	(251,65)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP MIII Creek 2 Acc
0100-301-006250-006250-254014-0000-0697-0000-	(260.81)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP Mill Creek 3 Acc
0100-301-006250-006250-254014-0000-0697-0000-	(525.99)	254014 3/1/2011 00:00:00		100	PCOR - REG LIAB LGE GEN (		1 LGE-131501-AROP Mill Creek 4 Acc
0100-304-006250-006250-108416-0000-0697-0000-	(27.45)	108416 3/1/2011 00:00:00	ARO	100	PSAL - REG LIAB LGE GEN (3	12/315) Salvage Depreciation Expense	1 LGE-131201-AROP MC3 Boiler Plt Egup

0100-304-006250-006250-108416-0000-0697-0000-	(28.29)	108416 3/1/2011 00:00:00	ARO	100
0100-304-006250-006250-254014-0000-0697-0000-	27.45	254014 3/1/2011 00:00:00	ARO	100
0100-304-006250-006250-254014-0000-0697-0000-	28.29	254014 3/1/2011 00:00:00	ARO	100
0100-122-006250-006250-403016-0000-0697-0000-	2,076.41	403016 3/1/2011 00:00:00	DEPR EXPENSE	100
0100-122-006250-006250-403016-0000-0697-0000-	15,832,55	403016 3/1/2011 00:00:00	DEPR EXPENSE	100
0100-122-006250-006250-403016-0000-0697-0000-	327.89	403016 3/1/2011 00:00:00	DEPR EXPENSE	100
0100-122-006250-006250-403016-0000-0697-0000-	(2,076.41)	403016 3/1/2011 00:00:00	DEPR EXPENSE	100
0100-122-006250-006250-403016-0000-0697-0000-	(15,832,55)	403016 3/1/2011 00:00:00	DEPR EXPENSE	100
0100-122-006250-006250-403016-0000-0697-0000-	(327.89)	403016 3/1/2011 00:00:00	DEPR EXPENSE	100

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PSAL - REG LIAB LGE GEN (312/315)	Salvage Depreciation Expense	1 LGE-131201-AROP MC4 SO2 Boller Plt
PSAL - REG LIAB LGE GEN (312/315)	Salvage Depreciation Expense	1 LGE-131201-AROP MC3 Boller Plt Equp
PSAL - REG LIAB LGE GEN (312/315)	Salvage Depreciation Expense	1 LGE-131201-AROP MC4 SO2 Boller Plt
Reclass Common Product Code to E	Depreciation Expense	1 LGE-139220-Transportation - Traile
Reclass Common Product Code to E	Depreciation Expense	1 LGE-139400-Tools, Shop, and Garage
Reclass Common Product Code to E	Depreciation Expense	1 LGE-139620-Power Op Equip-Other
Reclass Common Product Code to E	Depreciation Expense	1 LGE-139220-Transportation - Traile
Reclass Common Product Code to E	Depreciation Expense	1 LGE-139400-Tools, Shop, and Garage
Reclass Common Product Code to E	Depreciation Expense	1 LGE-139620-Power Op Equip-Other

### Attachment to Response to KU AG-1 Question No. 201 Page 1878 of 2028 Charnas

### Clark, Ed

From:

Nick Alexander <nalexander@pwrplan.com>

Sent:

Monday, May 02, 2011 4:51 PM

To:

Crescente, Angela

Subject:

RE: ARO reclass to 182 regulatory entries

Haha unfortunately the latter that I can't do it, but I like the positive notation that you give to no!

Nick Alexander

NALEXANDER@PWRPLAN.COM POWERPLAN CONSULTANTS, INC. (404) 217-7379

From: Crescente, Angela [mailto:Angela.Crescente@ige-ku.com]

Sent: Monday, 02 May, 2011 4:45 PM

To: Nick Alexander

Subject: RE: ARO reclass to 182 regulatory entries

OK, that's fine. I appreciate you getting back to me. So, you mean "no" as in "no problem" or "no" as in "can't do it"?

From: Nick Alexander [mailto:nalexander@pwrplan.com]

Sent: Monday, May 02, 2011 4:40 PM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Angela -

Sorry about the delay. I will be connecting in tomorrow to do a couple of other items on the list and I will definitely take a look at the downstream effects it might have. The answer I have been hearing is no if it is a depr group level reg entry.

Hope you had a great vacation!

Nick Alexander

NALEXANDER@PWRPLAN.COM POWERPLAN CONSULTANTS, INC. (404) 217-7379

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 27 April, 2011 10:04 AM

To: Nick Alexander

Subject: RE: ARO reciass to 182 regulatory entries

Nick,

I'm back from vacation and I hope you guys have gotten settled into your new office!

Please let me know if you have any updates on if we can run a script to fix ARO-4005, Reg-1001 and Reg-1001B for those two assets on LGE and the one on KU without messing anything else up.

Attachment to Response to KU AG-1 Question No. 201 Page 1879 of 2028 Charnas

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, April 13, 2011 11:22 AM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

I create new versions of each report and sent them to Nick to be included in the next rebuild. Whenever this new rebuild is made available, let me know, and I'll help you modify the report setup in Powerplant to point to the new reports so you can test the new reports.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 13 April, 2011 9:35 AM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

Sure thing, you go to Assets>ARO>Reg Entry>Reports and it is report number ARO-4005.

By the way, I remembered on the way home last night that I have this same problem on report "Reg-1001" so the asset adjustment that I did is not showing up on this report by asset either. I'm sorry, I should of thought of that sooner. This report is in the same location as the one above.

Also, Nick Alexander is here today and tomorrow working on some things for us including simple formatting tweeks on my reports, but he doesn't want to send them to the build until you are finished so he doesn't cause you any trouble. So he wanted me to keep him posted of when you are completed with your changes.

Thanks, Angela

**From:** PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, April 13, 2011 9:26 AM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Angela,

Can you tell me where in Powerplant you go to get to this report? I've lost my notes on how to find this report again.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 12 April, 2011 8:32 AM

Attachment to Response to KU AG-1 Question No. 201 Page 1880 of 2028 Charnas

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

Any word on the progress of the report? Just checking on it because I will be using it for my monthly account reconciliations.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 3:09 PM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

Report change won't be a quick turn around.

It will likely be next week before you'll get the report changed.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 1:48 PM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

I need to post these asset adjustments today since we have to close first thing in the morning. Are you expecting the report modification to happen today or can I go ahead and post these transactions and fix the report later? Is there anything else I can do to help?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Tuesday, April 05, 2011 9:35 AM

**To:** PowerPlant Support; Crescente, Angela; Jim Ogilvie **Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Angela called and provided clarification. I still had journal entries on the brain. The report can be modified to include asset id information.

Sunjin Cone PowerPlant Support 770-937-3000

From: PowerPlant Support

Sent: Tuesday, 05 April, 2011 9:16 AM

Attachment to Response to KU AG-1 Question No. 201 Page 1881 of 2028 Charnas

To: 'Crescente, Angela'; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

No, there is no way this report can show the asset\_id information for the entry you are asking about. You could run a query using the CPR Query tool window if you wanted to reconcile the asset adjustments dollars for the depr group.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Sunjin,

I am OK with the entry including both assets. Is there some way I can modify the report to show what happened by asset?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

**Sent:** Monday, April 04, 2011 5:00 PM **To:** Crescente, Angela; Jim Ogilvie

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

#### Angela,

The entry for \$ 9,754,171.05 that includes the two assets is a one line transaction due to both assets being in the same depr group, and the entry information is setup to pull from the depr\_ledger table, which is a table where the dollars are by depr group, and it doesn't appear that the setup can be changed to retain asset\_id information.

Sunjin Cone PowerPlant Support 770-937-3000

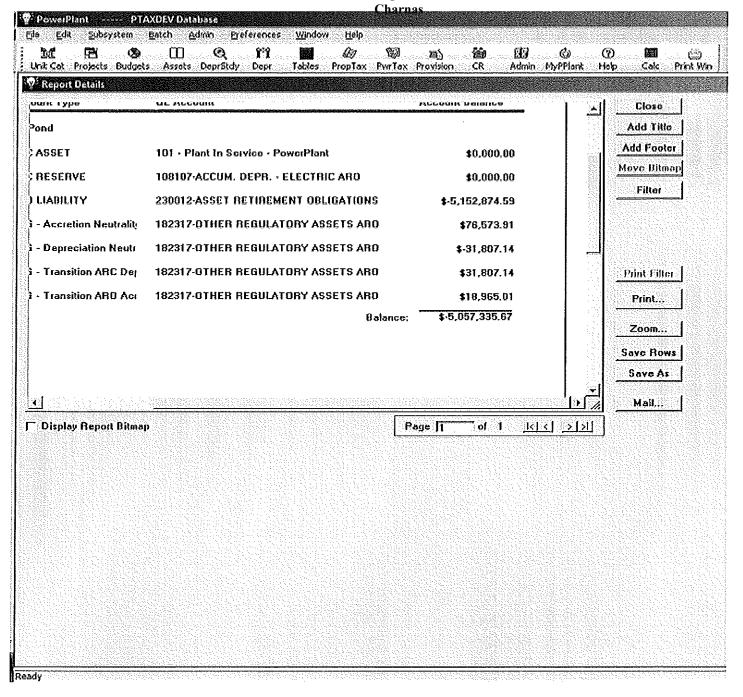
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

OK, accidentally told a lie (I'm sorry, it's Monday). I kept looking and now I can see where the reg entries fired, but since there was more than one done on LGE, it combined them which makes sense. However, my report does not reflect this activity by asset. Any ideas on how to make that work? I thought it worked before, but I must be mistaken. The other asset was Purc-MC Ash Pond for \$4,696,835.38.



<<li>eq entry rows march test.xlsx>>

Thanks,

Angela

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Attachment to Response to KU AG-1 Question No. 201 Page 1883 of 2028 Charnas

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storage medium.

Attachment to Response to KU AG-1 Question No. 201 Page 1885 of 2028 Charnas

## Clark, Ed

From:

Nick Alexander < nalexander@pwrplan.com>

Sent:

Monday, May 02, 2011 4:40 PM

To:

Crescente, Angela

Subject:

RE: ARO reclass to 182 regulatory entries

Angela -

Sorry about the delay. I will be connecting in tomorrow to do a couple of other items on the list and I will definitely take a look at the downstream effects it might have. The answer I have been hearing is no if it is a depr group level reg entry.

Hope you had a great vacation!

Nick Alexander

NALEXANDER@PWRPLAN.COM POWERPLAN CONSULTANTS, INC. (404) 217-7379

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 27 April, 2011 10:04 AM

To: Nick Alexander

Subject: RE: ARO reclass to 182 regulatory entries

Nick,

I'm back from vacation and I hope you guys have gotten settled into your new office!

Please let me know if you have any updates on if we can run a script to fix ARO-4005, Reg-1001 and Reg-1001B for those two assets on LGE and the one on KU without messing anything else up.

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Wednesday, April 13, 2011 11:22 AM

To: Crescente, Angela

Subject: RE: ARO reclass to 182 regulatory entries

I create new versions of each report and sent them to Nick to be included in the next rebuild.

Whenever this new rebuild is made available, let me know, and I'll help you modify the report setup in Powerplant to point to the new reports so you can test the new reports.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 13 April, 2011 9:35 AM

Attachment to Response to KU AG-1 Question No. 201 Page 1886 of 2028 Charnas

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

Sunjin,

Sure thing, you go to Assets>ARO>Reg Entry>Reports and it is report number ARO-4005.

By the way, I remembered on the way home last night that I have this same problem on report "Reg-1001" so the asset adjustment that I did is not showing up on this report by asset either. I'm sorry, I should of thought of that sooner. This report is in the same location as the one above.

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Sunjin Cone PowerPlant Support 770-937-3000

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Subject: RE: ARO reclass to 182 regulatory entries

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Sunjin Cone

Attachment to Response to KU AG-1 Question No. 201 Page 1887 of 2028 Charnas

PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 05 April, 2011 1:48 PM

To: PowerPlant Support

Subject: RE: ARO reclass to 182 regulatory entries

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**To:** PowerPlant Support; Crescente, Angela; Jim Ogilvie **Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

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Cc: Wiseman, Sara; Wacker, Dlana; Kinder, Debra Subject: RE: ARO reclass to 182 regulatory entries

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Tuesday, 05 April, 2011 8:33 AM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

Sunjin,

Attachment to Response to KU AG-1 Question No. 201 Page 1888 of 2028 Charnas

I am OK with the entry including both assets. Is there some way I can modify the report to show what happened by asset?

Thanks, Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

**Sent:** Monday, April 04, 2011 5:00 PM **To:** Crescente, Angela; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** RE: ARO reclass to 182 regulatory entries

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Sunjin Cone PowerPlant Support 770-937-3000

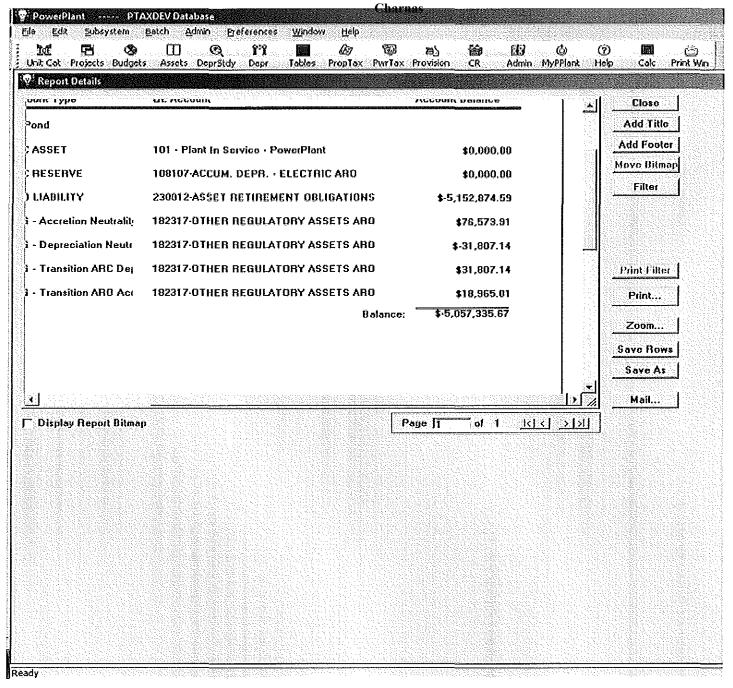
From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

**Sent:** Monday, 04 April, 2011 4:11 PM **To:** PowerPlant Support; Jim Ogilvie

**Cc:** Wiseman, Sara; Wacker, Diana; Kinder, Debra **Subject:** ARO reclass to 182 regulatory entries

Importance: High

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<<li>e reg entry rows march test.xlsx>>

Thanks,

Angela

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Charnas
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### Attachment to Response to KU AG-1 Question No. 201 Page 1892 of 2028 Charnas

# Clark, Ed

From:

Richardson, Ralph

Sent:

Monday, May 02, 2011 7:30 AM

To: Subject: Crescente, Angela **RE: ARO Settlements** 

This was run in PP production Friday so you should see it in Dev.

From: Crescente, Angela

Sent: Friday, April 29, 2011 2:13 PM

To: Richardson, Ralph

Subject: RE: ARO Settlements

Can you call me real quick please, I am getting ready to leave x2524.

From: Richardson, Ralph

Sent: Friday, April 29, 2011 1:52 PM

To: Crescente, Angela

Cc: Wacker, Diana; Kinder, Debra Subject: Re: ARO Settlements

Explain to me what the issue is so I can put it in the incident and what will be fixed

From: Crescente, Angela

Sent: Friday, April 29, 2011 01:48 PM

To: Richardson, Ralph

Cc: Wacker, Diana; Kinder, Debra Subject: FW: ARO Settlements

Ralph,

Please run the attached SQL in PP PROD.

Thanks! Angela

From: PowerPlant Support [mailto:support@pwrplan.com]

Sent: Thursday, March 31, 2011 2:11 PM

To: PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Please have the sql script below run to fix the effective dated rates problem described below.

Update depr\_method\_rates z

Set effective\_date = (

Select max(effective\_date)

From depr\_method\_rates

Where set of books id <> 5 and to char(effective date,'yyyy') <2011

And depr\_method\_id = z.depr\_method\_id

Attachment to Response to KU AG-1 Question No. 201 Page 1893 of 2028 Charnas

```
)
Where set_of_books_id = 5
And effective_date = to_date('201010', 'yyyymm');

Commit;

Sunjin Cone
PowerPlant Support
770-937-3000
```

From: PowerPlant Support

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

FYI -

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

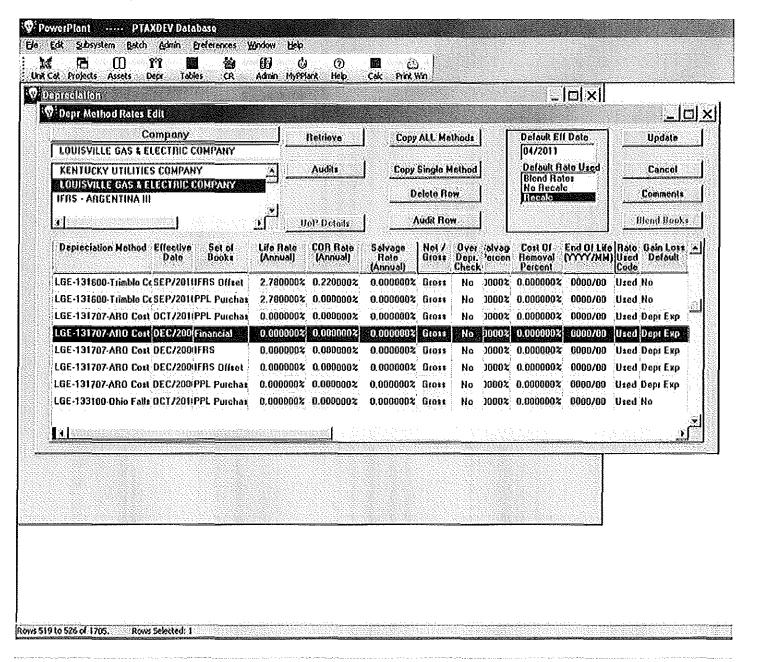
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



**From:** Jim Ogilvie [mailto:jogilvie@pwrplan.com] **Sent:** Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

# Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

Attachment to Response to KU AG-1 Question No. 201 Page 1895 of 2028 Charnas

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

**Sent:** Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

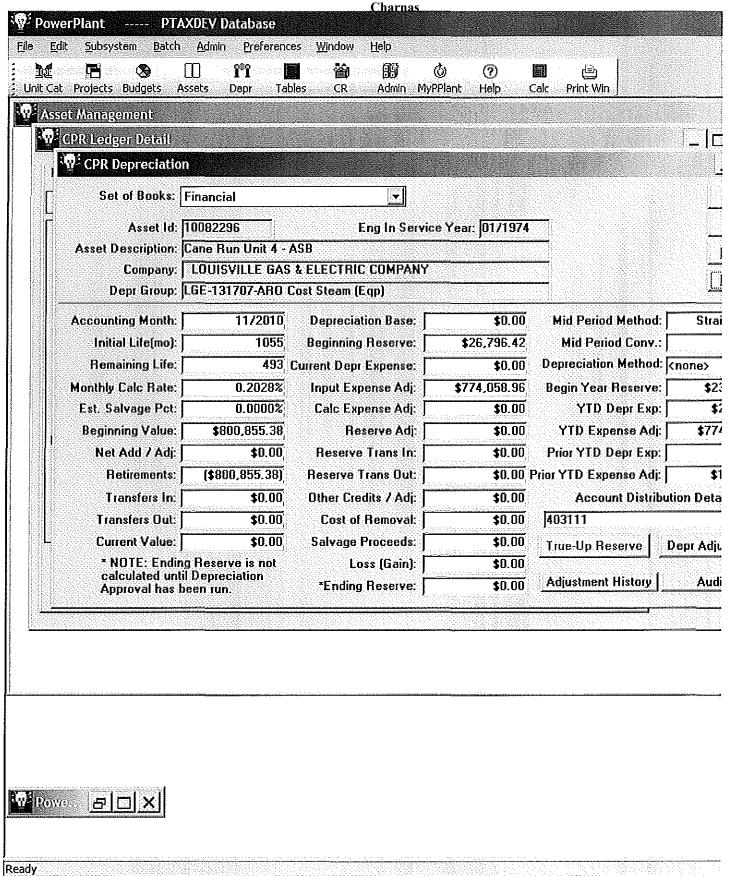
OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1896 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1897 of 2028 Charnas

Set of Books: Asset Id:		<u>[</u> <u>Z</u> ]			
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Depr Group:	LGE-131707-ARO	Cost Steam (Eqp)			
counting Month:	09/2009	Depreciation Base:	<b>\$</b> 35,458.72	Mid Period Method:	
Initial Life(mo):	1055	Beginning Reserve:	\$24,600.24	Mid Period Conv.:	
Remaining Life:	627	Current Depr Expense:	\$56.55	Depreciation Method:	(no
onthly Calc Rate:	0.1595%	Input Expense Adj.	\$1,262.05	Begin Year Reserve:	
st. Salvage Pct:	0.0000%	Calc Expense Adj: [	\$0.00	YTD Dept Exp: [	
Beginning Value:	\$60,689.98	Reserve Adj: 🗍	\$0.00	YTD Expense Adj:	
Net Add / Adj:	\$0.00	Reserve Trans In:	<b>\$</b> D.00	Prior YTD Depr Exp:	
Retirements:	<b>(\$</b> 2,122.31)	Reserve Trans Out:	\$0.00	Prior YTD Expense Adj: [	
Transfers In:	\$0.00	Other Credits / Adj: 🗍	\$0.00	Account Distribu	tion
Transfers Out:	\$0.00	Cost of Removal: 「	\$0.00	403111	
Current Value:	\$58,567.67	Salvage Proceeds: [	\$0.00	True-Up Reserve	Dep
		Loss (Gain):	\$0.00		
		*Ending Reserve:	\$23,796.53	Adjustment History	
	Established Annual Control of the Co				
					7. 1 1
	Depr Group: counting Month: Initial Life(mo): Remaining Life: onthly Calc Rate: st, Salvage Pct: Beginning Value: Net Add / Adj: Retirements: Transfers Out: Current Value: * NOTE: Endir calculated unl	Depr Group: LGE-131707-ARO    Counting Month:	Depr Group: LGE-131707-ARO Cost Steam (Eqp)  counting Month: 09/2009 Depreciation Base: Initial Life(mo): 1055 Beginning Reserve: Remaining Life: 627 Current Depr Expense: Input Expense Adj. Input Expense Adj. St. Salvage Pct: 0.0000% Calc Expense Adj. Beginning Value: \$60,689.98 Reserve Adj. Reserve Adj. Net Add / Adj. \$0.00 Reserve Trans In: Retirements: (\$2,122.31) Reserve Trans Out: Transfers In: \$0.00 Other Credits / Adj. Transfers Out: \$0.00 Cost of Removal: Current Value: \$58,567.67 Salvage Proceeds: NOTE: Ending Reserve is not calculated until Depreciation	Initial Life(mo): 1055 Beginning Reserve: \$24,600.24  Remaining Life: 627 Current Depr Expense: \$56.55  Inthly Calc Rate: 0.1595% Input Expense Adj: \$1,262.05  Institut Expense Adj: \$1,262.05  Institut Expense Adj: \$1,262.05  Institut Expense Adj: \$1,262.05  Institut Expense Adj: \$0.00  Institut Expense A	Depr Group: LGE-131707-ARO Cost Steam (Eqp)  Counting Month: 09/2009 Depreciation Base: \$35,458.72 Mid Period Method: Initial Life(mo): 1055 Beginning Reserve: \$24,600.24 Mid Period Conv  Remaining Life: 627 Current Depr Expense: \$56,55 Depreciation Method: Initial Life(mo): 10,1595% Input Expense Adj: \$1,262.05 Begin Year Reserve: 10,1595% Input Expense Adj: \$1,262.05 Begin Year Reserve: 10,1595% Input Expense Adj: \$0,00 YTD Depr Exp: 10,1595% Beginning Value: \$60,689.98 Reserve Adj: \$0,00 YTD Expense Adj: 10,00 Prior YTD Depr Exp: 10,000 Reserve Trans In: 10,00 Prior YTD Depr Exp: 10,000 Reserve Trans Out: 10,00 Prior YTD Expense Adj: 10,00

Thanks, Angela

### Attachment to Response to KU AG-1 Question No. 201 Page 1898 of 2028 Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

PowerPlan is moving, effective April 18, 2011. Please update your records. The **New Address** is:

PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email I attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.

Attachment to Response to KU AG-1 Question No. 201 Page 1899 of 2028 Charnas

₩ PowerPlant PTAXDEV Database File Edit Subsystem: Batch <u>A</u>dmin Preferences <u>Window</u> Help 1df F 3 nasi 🕕 m 闸 (0)(?) ٣ Unit Cat Projects Budgets Assets Tables Admin MyPPlant Help Calc Print Win Depr CR y Tables W PowerPlant Table Maintenance Regulatory Entry Type Please Select A Record Description Column Expression **Accretion Expense** ACCRETED ARC Adjustment **ADJUSTMENTS** ARC Depreciation Expense CURR\_DEPR\_EXPENSE + DEPR\_EXP\_ADJUST + DEPR\_EXP\_ALLOC\_ADJL ARC Retirement RETIREMENTS ARO Gain/Loss INPUT\_GAIN\_LOSS + GAIN\_LOSS ARD Settlement SETTLED Closed Cost of Removal COST\_OF\_REMOVAL COR Expense COR\_EXPENSE + COR\_EXP\_ADJUST + COR\_EXP\_ALLOC\_ADJUST Depreciation Expense DEPRECIATION\_EXPENSE + DEPR\_EXP\_ADJUST+ DEPR\_EXP\_ALLOC\_AC IFRS Input Gain/Loss INPUT\_GAIN\_LOSS Salvage Depreciation Expense SALVAGE\_EXPENSE + SALVAGE\_EXP\_ADJUST + SALVAGE\_EXP\_ALLOC\_# Transition ARC Depreciation Expe RESERVE\_ADJUSTMENT Transition ARO Accretion (curr mo ACCRETED) Transition ARO Begin Liability BEG\_LIABILITY Rows 1 to 14 of 14

Thanks, Angela

### Attachment to Response to KU AG-1 Question No. 201 Page 1900 of 2028 Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

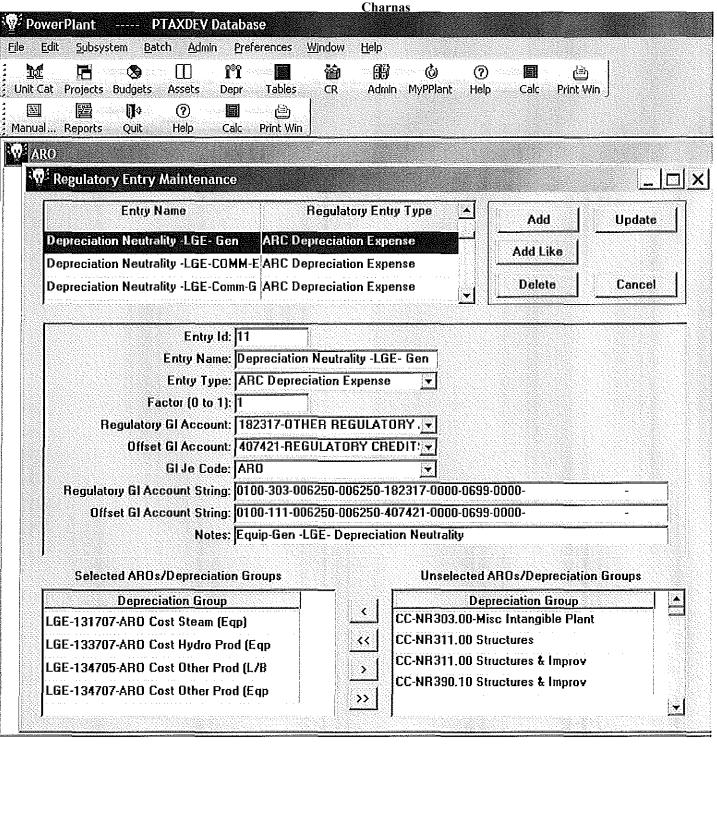
Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

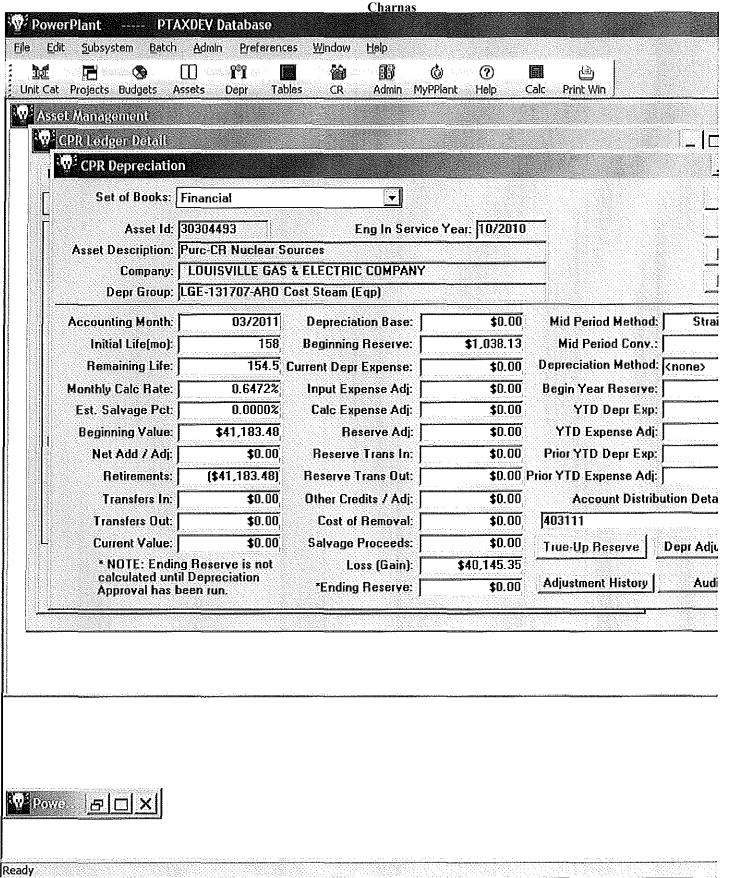
Jim,

The ARO I am looking at is Purc-CR Nuclear Sources in Depr Group LGE 131707. The amount I would expect to see if \$40,145.35 because of the difference left in the reserve to clear out the 108107 account for this asset (credit 108 – debit 182). I have attached a screenshot of the reg entry. I am also sending a screenshot of the depr reserve screen. Let me know what else I can do to help.

Attachment to Response to KU AG-1 Question No. 201 Page 1901 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1902 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1903 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Angela,

Given the number and complexity of LGE & KU's reg entries, it would be very helpful if you could provide the following information:

- The ARO(s) involved (your screenshot suffices)
- The Depr Group(s) involved
- The Reg Entry you expect to see a journal entry for (screenshot from the reg entry screen)
- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

This will make it much easier for us to help you.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

#### All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1904 of 2028

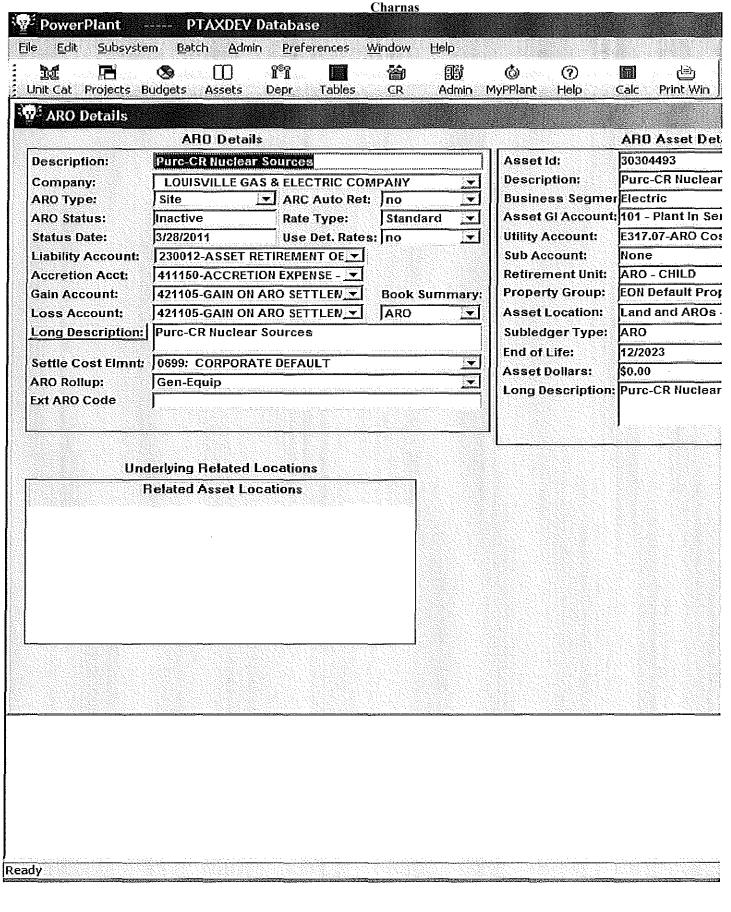
Charnas still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1905 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1906 of 2028 Charnas

Charnas NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @Jge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly. The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium. NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

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Attachment to Response to KU AG-1 Question No. 201 Page 1907 of 2028 Charnas

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NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

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# Clark, Ed

From:

Richardson, Ralph

Sent:

Friday, April 29, 2011 1:52 PM

To:

Crescente, Angela

Cc:

Wacker, Diana; Kinder, Debra

Subject:

Re: ARO Settlements

Explain to me what the issue is so I can put it in the incident and what will be fixed

From: Crescente, Angela

Sent: Friday, April 29, 2011 01:48 PM

To: Richardson, Raiph

**Cc:** Wacker, Diana; Kinder, Debra **Subject**: FW: ARO Settlements

Ralph,

Please run the attached SQL in PP PROD.

Thanks! Angela

**From:** PowerPlant Support [mailto:support@pwrplan.com]

Sent: Thursday, March 31, 2011 2:11 PM

To: PowerPlant Support; Crescente, Angela; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

Please have the sql script below run to fix the effective dated rates problem described below.

From: PowerPlant Support

770-937-3000

Sent: Wednesday, 30 March, 2011 6:20 PM

To: 'Crescente, Angela'; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Attachment to Response to KU AG-1 Question No. 201 Page 1909 of 2028 Charnas

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: RE: ARO Settlements

FYI -

Angela and I found the cause of the problem with the gain loss postings. It's related to the effective dated rates on the Depreciation Methods. Currently, I am running additional queries to identify other depr groups where this might be a problem and will provide a mass update to address those data problems.

Here is a sample you can look at in Production (for testing purposes the data problem has been fixed in Dev for this Depreciation Methods).

Please go to Depreciation, Select.

Select depr group = LGE-131707-ARO Cost Steam (Eqp).

Go to the GroupRate window.

Notice how you have effective dated rate for 10/2010 for set of books = PPL Purchase Accounting.

The problem is that is the only one that has effective dated rates for 10/2010.

The other rates for the set of books that actually matter for this asset all have effective date of 12/2006, and those are being ignored, which causes Post to get confused and use the wrong gain loss default.

Sunjin Cone PowerPlant Support 770-937-3000

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 3:06 PMe

To: Jim Oqilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Kinder, Debra; Wacker, Diana

Subject: FW: ARO Settlements

Hey Jim,

What's plan B?

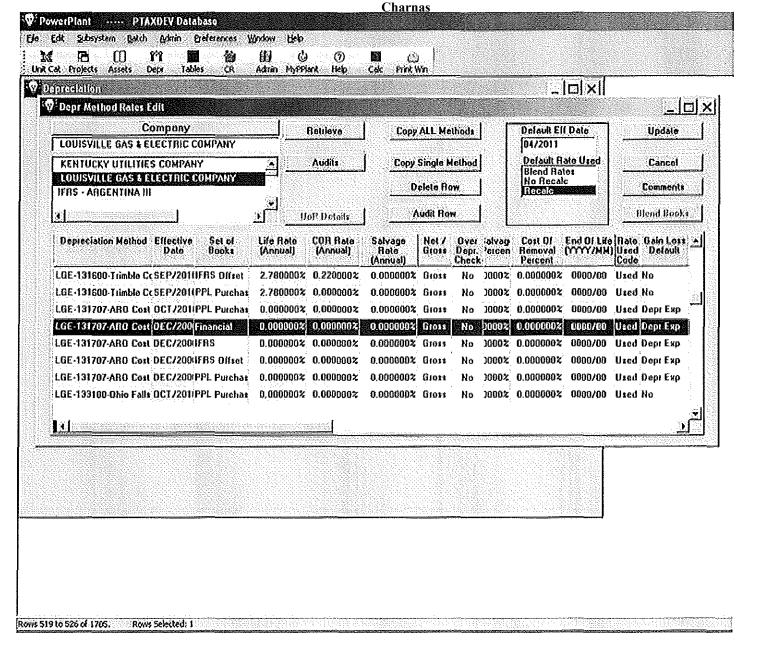
From: Kinder, Debra

Sent: Wednesday, March 30, 2011 11:24 AM

To: 'Jim Ogilvie'; Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

**Cc:** Wiseman, Sara; Wacker, Diana **Subject:** RE: ARO Settlements

The default already is "Depr Exp":



From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Wednesday, March 30, 2011 9:19 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

## Angela,

You need to change the "gain loss default" option assigned to this depr group (via the depr method's rates) to "Depr Exp". Then the system will book the remaining NBV of the asset as depreciation expense instead of gain/loss for the ARO child assets.

You may want to use the Depr >> Methods screen to ensure this option is set correctly for all ARO depr methods. You will have to add a "new rate" to make this change as the system will not let you edit the data used in previous months' calculations.

Attachment to Response to KU AG-1 Question No. 201 Page 1911 of 2028 Charnas

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Wednesday, 30 March, 2011 8:58 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: FW: ARO Settlements

Jim,

Have you come up with anything yet? We were hoping to get some settlements done this month so we wanted to check and see what you were thinking.

Thanks, Angela

From: Crescente, Angela

Sent: Tuesday, March 29, 2011 12:01 PM

To: 'Jim Ogilvie'; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Jim,

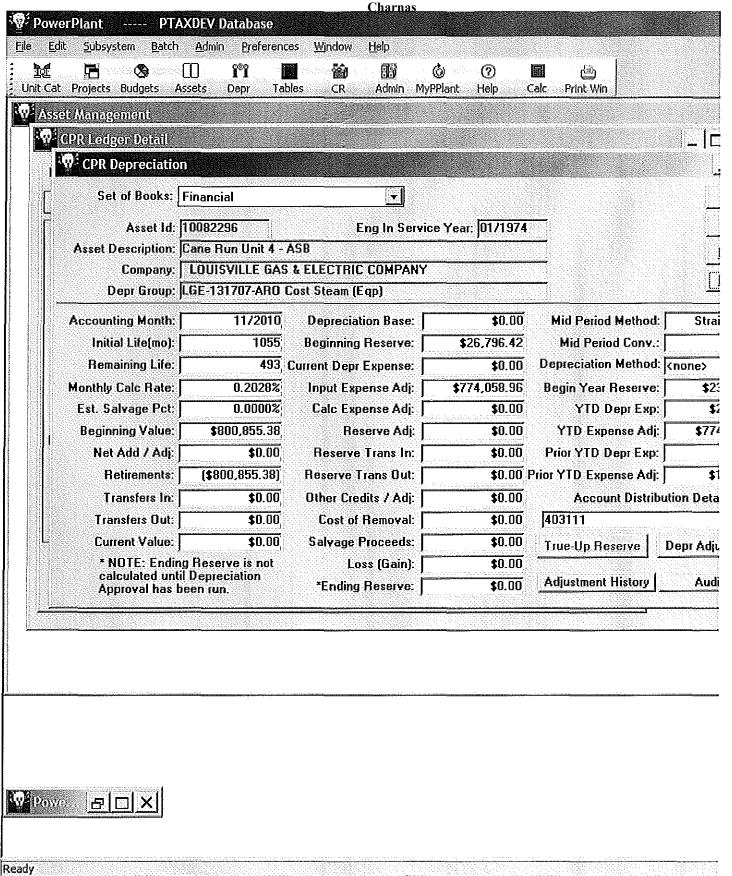
OK, it looks like on a full retirement (November 2010), it used to put the difference in the input expense adjustment field and now it is putting it in the gain/loss field. Is it because they are transitions?

On a partial retirement (September 2009), it put the difference in the input expense adjustment field and included the current depr expense as it should. Also, this appears to be how the reg entry type was written to look at it.

I have attached both screenshots for you to look at and included the reg entry spreadsheets for both transactions.

So, I don't know why it is putting it in the gain/loss field now. How do we change it?

Attachment to Response to KU AG-1 Question No. 201 Page 1912 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1913 of 2028 Charnas

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	CPR Depreciation	on The State of th	TO THE STATE OF TH			
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		Cane Run Unit 4 -				
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10000000000000000000000000000000000000	Depr Group:	LGE-131707-ARO	Cost Steam (Eqp)			
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(3)500	Remaining Life:	627	Current Depr Expense:	\$56.55	Depreciation Method:	(none)
	Monthly Calc Rate:	0.1595%	Input Expense Adj:	\$1,262.05	Begin Year Reserve:	\$
200	Est. Salvage Pct:	0.0000%	Calc Expense Adj: 🗍	\$0.00	YTD Dept Ехр:	
	Beginning Value:	\$60,689.98	Reserve Adj:	\$0.00	YTD Expense Adj:	;
Marry Marry	Net Add / Adj:	\$0.00	Reserve Trans In:	\$0.00	Prior YTD Depr Exp:	
Securitation (	Retirements:	(\$2,122.31)	Reserve Trans Out:	\$0.00	Prior YTD Expense Adj:	, , , , , , , , , , , , , , , , , , ,
Securitado Securitado	Transfers In:	\$0.00	Other Credits / Adj:	\$0.00	Account Distrib	ution Del
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L	Current Value:	\$58,567.67	Salvage Proceeds:	\$0.00	True-Up Reserve	Depr Ad
		ng Reserve is not	Loss (Gain):	\$0.00		0.52
	calculated un Approval has	til Depreciation been run.	*Ending Reserve:	\$23,796.53	Adjustment History	Au
ADIC.					The state of the s	

Thanks, Angela

### Attachment to Response to KU AG-1 Question No. 201 Page 1914 of 2028 Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:40 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

I can't speak to what may have changed. If you can point out the same information you just provided (ARO, Depr group, Reg Entry, Amounts, etc) for the previous case that you believe worked, then we can compare it to your current configuration.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

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From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 11:14 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

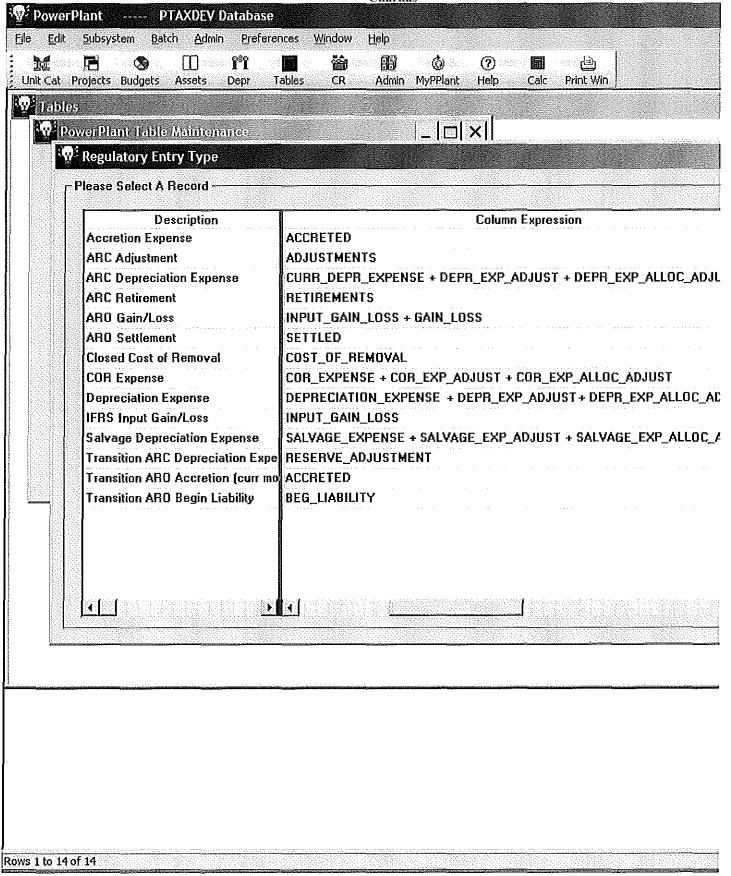
Subject: RE: ARO Settlements

Jim,

I see what you are saying, but it always worked before so I don't know why it would be different now (in my first email attached the spreadsheet from a settlement from 2009).

I do have a gain/loss reg entry type, but that is for the liability side, not the retirement side. The gain/loss on the liability worked. We can add a new one for retirements if you think that is better, I am just confused as to why it used to work. Please see the attached reg entry type table screenshot. The ARC Depr Expense reg entry type has not been modified since 11/2007 on the time stamp.

Attachment to Response to KU AG-1 Question No. 201 Page 1915 of 2028 Charnas



Thanks, Angela

#### Attachment to Response to KU AG-1 Question No. 201 Page 1916 of 2028 Charnas

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]

Sent: Tuesday, March 29, 2011 11:00 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

Thanks Angela, that really clears things up. I think the problem is this:

- The amount you are expecting to see on the reg entry is in the "Gain Loss" field for the depreciation.
- The reg entry you are looking at has a reg entry type of "ARC Depreciation Expense".
- I doubt this reg entry type includes the gain/loss amount when generating its entry. Do you have a reg entry type setup for gain/loss?

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Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:48 AM

To: Jim Ogilvie; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

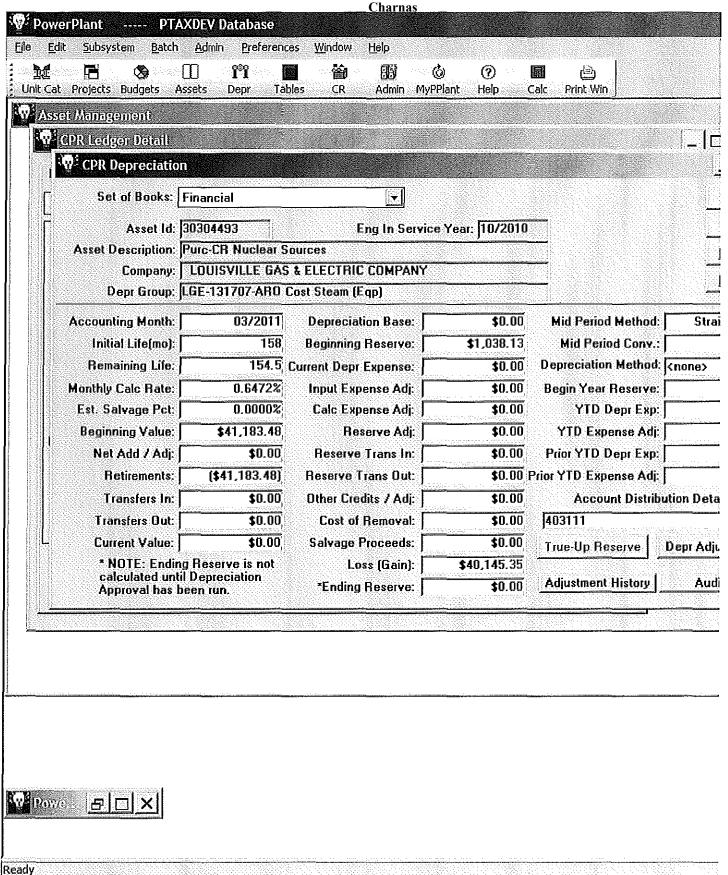
Jim,

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Attachment to Response to KU AG-1 Question No. 201 Page 1917 of 2028

Charnas PowerPlant PTAXDEV Database File Edit Subsystem Batch <u>A</u>dmin Preferences Window <u>H</u>elp 83 11 F m 쒤 **(**0) (?) Unit Cat Projects Budgets Assets Tables CR Admin MyPPlant Calc Print Win Depr Help 圝 N 屋 **(?**) ٨ Print Win Manual... Reports Quit Help Calc YARO) Regulatory Entry Maintenance Entry Name Regulatory Entry Type Update Add Depreciation Neutrality -LGE- Gen ARC Depreciation Expense Add Like Depreciation Neutrality -LGE-COMM-E ARC Depreciation Expense Depreciation Neutrality -LGE-Comm-G ARC Depreciation Expense Delete Cancel Entry Id: 11 Entry Name: Depreciation Neutrality -LGE- Gen Entry Type: ARC Depreciation Expense Factor (0 to 1); 1 Regulatory GI Account: 182317-OTHER REGULATORY. Offset GI Account: 407421-REGULATORY CREDIT: ▼ Gl Je Code: ARO Regulatory GI Account String: 0100-303-006250-006250-182317-0000-0699-0000-Offset GI Account String: 0100-111-006250-006250-407421-0000-0699-0000-Notes: Equip-Gen -LGE- Depreciation Neutrality Unselected AROs/Depreciation Groups Selected AROs/Depreciation Groups Depreciation Group Depreciation Group CC-NR303.00-Misc Intangible Plant LGE-131707-ARO Cost Steam (Eqp) CC-NR311.00 Structures LGE-133707-ARO Cost Hydro Prod (Egp CC-NR311.00 Structures & Improv LGE-134705-ARO Cost Other Prod (L/B CC-NR390.10 Structures & Improv LGE-134707-ARO Cost Other Prod (Eqp.

Attachment to Response to KU AG-1 Question No. 201 Page 1918 of 2028



Attachment to Response to KU AG-1 Question No. 201 Page 1919 of 2028 Charnas

Thanks, Angela

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com] Sent: Tuesday, March 29, 2011 10:34 AM

To: Crescente, Angela; PowerPlant Support; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: RE: ARO Settlements

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- The amount of the entry you expect to see with a brief explanation where that amount comes from (e.g. \$100 because XXX)

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PowerPlan Consultants, Inc. 200 Galleria Parkway, Ste. 1300 Atlanta, GA 30339

Note: Phone numbers will not change.

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, 29 March, 2011 10:25 AM

To: PowerPlant Support; Jim Ogilvie; Jim Dahlby; Josh Hirschel; Joseph Holt

Cc: Wiseman, Sara; Wacker, Diana; Kinder, Debra

Subject: ARO Settlements

## All:

I am trying to test settlements this month and they are not working properly. The reg entry Depreciation Neutrality is not showing up on my reg entry rows. I have attached a spreadsheet of what I am seeing now versus what I usually see. I have looked over the reg entry and cannot see why it wouldn't be working. I can see this entry being used for normal month depreciation on the other assets, but when I retire, it doesn't fire for that particular asset. We set up these new transition AROs back in November, I am unsure of whether or not that could be the problem. The only thing I know of is that the old ones had "ARO" under book summary in the details screen and the new ones were blank. So, I went in and added "ARO" to book summary and it

Attachment to Response to KU AG-1 Question No. 201 Page 1920 of 2028

Charnas still did not work. So, I tried to process the settlement both with that field blank and with "ARO" and neither one worked. I have attached a screenshot for this too. Please advise.

<<li><<lgetestmarch.xlsx>> <<LGE REG ENTRIES.xlsx>>

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1921 of 2028 Charnas

**PowerPlant PTAXDEV Database** <u>Fi</u>le <u>E</u>dit Subsystem: Batch Admin Preferences <u>Window</u> Help ارچا (3) n AA (0) (?) 1 TOT. Fi П Unit Cat Projects Budgets Assets Tables CR Admin MyPPlant Help Calc Print Win Depr W ARO Details ARO Details ARO Asset Det Asset Id: 30304493 Description: Purc-CR Nuclear Sources Description: Purc-CR Nuclear LOUISVILLE GAS & ELECTRIC COMPANY Company: ARO Type: Site ▼ ARC Auto Ret: no Business Segmer Electric Asset Gl Account: 101 - Plant in Sei ARO Status: Inactive Rate Type: Standard • **Utility Account:** E317.07-ARO Cos Status Date: 3/28/2011 Use Det. Rates: no **-**Sub Account: None 230012-ASSET RETIREMENT OF Liability Account: Retirement Unit: ARO - CHILD Accretion Acct: 411150-ACCRETION EXPENSE - -EON Default Prop Gain Account: 421105-GAIN ON ARO SETTLEN **Book Summary:** Property Group: Land and AROs · Loss Account: 421105-GAIN ON ARO SETTLEN 🕶 ARO Asset Location: ₹ Purc-CR Nuclear Sources ARO Long Description: Subledger Type: 12/2023 End of Life: Settle Cost Elmnt: 0699: CORPORATE DEFAULT • Asset Dollars: \$0.00 ARO Rollup: Gen-Equip ¥ Long Description: Purc-CR Nuclear **Ext ARO Code Underlying Related Locations** Related Asset Locations Ready

Attachment to Response to KU AG-1 Question No. 201 Page 1922 of 2028

Charnas

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Attachment to Response to KU AG-1 Question No. 201 Page 1923 of 2028

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Attachment to Response to KU AG-1 Question No. 201 Page 1924 of 2028 Charnas

Crescente, Angela

From:

Crescente, Angela

Sent:

Wednesday, April 27, 2011 3:58 PM

To:

Koellner, Corey

Subject:

RE: LG&E ARO Regulatory Liabilities

Follow Up Flag: Flag Status:

Follow up Completed

Tracking:

Recipient

Koellner, Corey

Read

Read: 4/27/2011 4:01 PM

Corey,

This activity should be netted against the credits.

Thanks, Angela

From: Koellner, Corey

Sent: Wednesday, April 27, 2011 3:48 PM

To: Crescente, Angela

Subject: LG&E ARO Regulatory Liabilities

Angela -

I'm preparing the LG&E Regulatory Liab information that will be included in the Form 3 filing. I identified these ARO liabs with debit activity in 1Q11:

Account	Account	Je Name	Line Description	Debits
254014	REGULATORY LIABILITY ARO - GENERATION	PP ARO USD 01-FEB-11	Journal Import Created	55.74
254014	REGULATORY LIABILITY ARO - GENERATION	PP ARO USD 01-JAN-11	Journal Import Created	55.74
254014	REGULATORY LIABILITY ARO - GENERATION	PP ARO USD 01-MAR-11	Journal Import Created	55.74

Could let me know if these items should be documented as debits, or if the nature of the activity is such it should be netted against the credits.

Thanks!

Attachment to Response to KU AG-1 Question No. 201 Page 1925 of 2028 Charnas

# Clark, Ed

From:

Crescente, Angela

Sent:

Wednesday, April 27, 2011 10:53 AM

To: Cc: Leichty, Doug Wiseman, Sara

Subject:

RE: SLC-ARO Entry 12312010.docx

Doug,

Please see below. Shannon approved it. Please send it to the Virginia staff.

Thanks, Angela

From: Charnas, Shannon

Sent: Wednesday, April 27, 2011 9:49 AM

To: Wiseman, Sara Cc: Crescente, Angela

Subject: RE: SLC-ARO Entry 12312010.docx

I am fine with this, thanks.

## Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Wednesday, April 27, 2011 9:38 AM

**To:** Charnas, Shannon **Cc:** Crescente, Angela

Subject: SLC-ARO Entry 12312010.docx

<< File: SLC-ARO Entry 12312010.docx >>

#### Shannon:

As you may know, Angela and I met with the VA staff on Monday to discuss AROs and some general issues including plant. As a result of the meeting, they asked for a sample ARO entry for December 2011. Here it is for your review.

Attachment to Response to KU AG-1 Question No. 201 Page 1926 of 2028 Charnas

# Clark, Ed

From:

Charnas, Shannon

Sent:

Wednesday, April 27, 2011 9:49 AM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

RE: SLC-ARO Entry 12312010.docx

I am fine with this, thanks.

## Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Wednesday, April 27, 2011 9:38 AM

**To:** Charnas, Shannon **Cc:** Crescente, Angela

Subject: SLC-ARO Entry 12312010.docx

<< File: SLC-ARO Entry 12312010.docx >>

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Attachment to Response to KU AG-1 Question No. 201 Page 1927 of 2028 Charnas

# Clark, Ed

From:

Wiseman, Sara

Sent:

Wednesday, April 27, 2011 9:38 AM

To: Cc: Charnas, Shannon Crescente, Angela

Subject:

SLC-ARO Entry 12312010.docx



SLC-ARO Entry 12312010.docx

#### Shannon:

As you may know, Angela and I met with the VA staff on Monday to discuss AROs and some general issues including plant. As a result of the meeting, they asked for a sample ARO entry for December 2011. Here it is for your review.

# KENTUCKY UTILITIES COMPANY D/B/A OLD DOMINION POWER COMPANY

**CASE NO. PUE 2011-00013** 

Response to SCC Data Requests (On-Site)
Dated: April 25, 2011

Responding Witness: Shannon L. Charnas

- Q. Provide December 2010 ARO journal entry activity.
- A. See below.

Account	Debit	Credit
403-Depreciation Expense	\$242,198	
411-Accretion Expense	\$223,682	
108-Accumulated Depreciation		\$242,198
230-ARO Liability		\$223,682
407-Regulatory Credit		\$466,346
182-Regulatory Asset	\$466,346	

Total \$932,226 \$932,226

Attachment to Response to KU AG-1 Question No. 201 Page 1929 of 2028 Charnas

# Clark, Ed

From:

Leichty, Doug

Sent:

Wednesday, April 27, 2011 7:56 AM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

RE: VASCC site visit ARO entry.docx

Attachments: SLC-ARO Entry 12312010.docx

See attached.

From: Wiseman, Sara

Sent: Tuesday, April 26, 2011 9:09 PM

**To:** Leichty, Doug **Cc:** Crescente, Angela

Subject: VASCC site visit ARO entry.docx

<< File: VASCC site visit ARO entry.docx >>

Doug:

Would you take a look at this response and see if it looks OK? If so, we will pass it by Shannon.

Thanks.

# KENTUCKY UTILITIES COMPANY D/B/A OLD DOMINION POWER COMPANY

# **CASE NO. PUE 2011-00013**

Response to SCC Data Requests (On-Site)
Dated: April 25, 2011

Responding Witness: Shannon L. Charnas

- Q. Provide December 2010 ARO journal entry activity.
- A. See below.

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403-Depreciation Expense	\$242,198	
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108-Accumulated Depreciation		\$242,198
230-ARO Liability		\$223,682
407-Regulatory Credit		\$466,346
182-Regulatory Asset	\$466,346	

Total \$932,226 \$932,226

Attachment to Response to KU AG-1 Question No. 201 Page 1931 of 2028 Charnas

# Clark, Ed

PowerPlantAlerts@eon-us.com Wednesday, April 27, 2011 6:00 AM Crescente, Angela PowerPlant Alerts - LGE-KU - AIP - ARO From: Sent:

To:

Subject:

Project 132874 has ARO Project 132875 has ARO

login to powerplant

Attachment to Response to KU AG-1 Question No. 201 Page 1932 of 2028 Charnas

## Crescente, Angela

From:

Elmore, Barry

Sent:

Thursday, January 27, 2011 4:32 PM

To:

Crescente, Angela Wiseman, Sara

Cc: Subject:

RE: Regulatory Asset and Regulatory Liability - PPL

## Angela,

I am not sure what your differences are; however, I would put what you all have and what is consistent on our reports in Sharepoint. However, if you feel like something is not clicking between us and them, then we can get together and call Jon Benfield at PPL. Let me know what you all want to do.

#### Barry Elmore

Manager, Financial Accounting and Reporting LG&E and KU Energy LLC 502-627-3580

From: Crescente, Angela

Sent: Thursday, January 27, 2011 3:26 PM

To: Elmore, Barry Cc: Wiseman, Sara

Subject: Regulatory Asset and Regulatory Liability - PPL

#### Barry,

I am not coming up with the same numbers for the ARO regulatory asset and regulatory liability lines as PPL has on their 10-K so I made the change on the document in SharePoint as requested. I made other changes as well, but this one concerned me since it had to do with numbers.

Thanks, Angela

#### Attachment to Response to KU AG-1 Question No. 201 Page 1933 of 2028 Charnas

# Crescente, Angela

From:

Kinder, Debra

Sent:

Thursday, January 06, 2011 12:40 PM

To:

'Jim Ogilvie'; 'support'; akoch@pwrplan.com

Cc:

Wacker, Diana; Crescente, Angela; Clements, Chad

Subject:

RE: GI to CR outage

Yep, that's right.

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]
Sent: Thursday, January 06, 2011 12:08 PM
To: Kinder, Debra; 'support'; akoch@pwrplan.com
Cc: Wacker, Diana; Crescente, Angela; Clements, Chad

Subject: RE: GI to CR outage

So PP sent an unbalanced entry to Oracle, and you corrected it in Oracle?

If that is the case, then we'll likely need to give you a SQL script to correct the CR because you won't be able to make a one-sided manual JE.

Jim Ogilvie jogilvie@pwrplan.com 678-421-4809

From: Kinder, Debra [mailto:Debra.Kinder@lge-ku.com]

**Sent:** Thursday, 06 January, 2011 11:53 AM **To:** Jim Ogilvie; support; <u>akoch@pwrplan.com</u>

Cc: Wacker, Diana; Crescente, Angela; Clements, Chad

Subject: RE: GI to CR outage

Added two credit balance lines. We need the attached two credit lines in the CR to clear the balance there.

Thanks, Deb

From: Jim Ogilvie [mailto:jogilvie@pwrplan.com]
Sent: Thursday, January 06, 2011 10:40 AM
To: Kinder, Debra; 'support'; akoch@pwrplan.com
Cc: Wacker, Diana; Crescente, Angela; Clements, Chad

Subject: RE: GI to CR outage

Can you tell us exactly what you changed during the Oracle import? Added a line, changed a line, etc...

Jim Ogilvie

Attachment to Response to KU AG-1 Question No. 201 Page 1934 of 2028 Charnas

jogilvie@pwrplan.com 678-421-4809

From: Kinder, Debra [mailto:Debra.Kinder@lge-ku.com]

**Sent:** Thursday, 06 January, 2011 10:19 AM **To:** support; Jim Ogilvie; <u>akoch@pwrplan.com</u>

Cc: Wacker, Diana; Crescente, Angela; Clements, Chad

Subject: GI to CR outage

#### Good Morning,

During November's closing a PP ARO journal produced an error (see screen shot attached) we fixed the entry before we imported it to Oracle General Ledger, but now it is causing a GL to CR outage of \$144,529.10 in account

421105. I'm not sure how to fix this in CR now. Can you help?

month\_number gl\_journal\_category company account cr gl difference 201011 POWERPLANT 0100 421105 144529.1 0.00 144,529.10

<<JE Error.pdf>>

Thanks,

Deb

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Attachment to Response to KU AG-1 Question No. 201 Page 1936 of 2028 Charnas

# Crescente, Angela

From:

Sent:

Wiseman, Sara Thursday, December 29, 2011 9:05 AM Crescente, Angela

To: Subject: Trimble comments

Re: Comments by Re: Comments by January 6 - Tr... January 6 - Tr...

#### Attachment to Response to KU AG-1 Question No. 201 Page 1937 of 2028 Charnas

# Crescente, Angela

From:

Trimble, Robert

Sent:

Thursday, December 29, 2011 9:02 AM

To:

Wiseman, Sara

Subject:

Re: Comments by January 6 - Transmission ARO Discussion.docx

Do we need to add PT's to the ARO list at the bottom?

Robby Trimble | Mgr Transmission Lines & Substation Construction Cell - 859-576-0045 or 502-376-8364 eFax - 502-217-2100

Sent from my iPad

On Dec 28, 2011, at 10:08 AM, "Wiseman, Sara" < Sara. Wiseman@lge-ku.com > wrote:

Hi all:

I want to thank everyone for helping us out on the ARO review we are currently conducting. Angela and I have attempted to compile a summary of items discussed at our meeting as well as what was decided on each item. Please take a few minutes to review it and provide any comments you may have to us. Please track your comments. We will be using this document as a starting point for our future discussions. If possible, we would appreciate comments by Friday, January 6. (The document is slightly longer than one page, so hopefully it would be a quick read).

Thanks!

Sara

<Transmission ARO Discussion.docx>

Attachment to Response to KU AG-1 Question No. 201 Page 1938 of 2028 Charnas

# Crescente, Angela

From:

Trimble, Robert

Sent:

Thursday, December 29, 2011 9:02 AM

To:

Wiseman, Sara

Subject:

Re: Comments by January 6 - Transmission ARO Discussion.docx

Otherwise looks good

Robby Trimble | Mgr Transmission Lines & Substation Construction Cell - 859-576-0045 or 502-376-8364 eFax - 502-217-2100

Sent from my iPad

On Dec 28, 2011, at 10:08 AM, "Wiseman, Sara" < Sara. Wiseman@lge-ku.com > wrote:

Hi all:

I want to thank everyone for helping us out on the ARO review we are currently conducting. Angela and I have attempted to compile a summary of items discussed at our meeting as well as what was decided on each item. Please take a few minutes to review it and provide any comments you may have to us. Please track your comments. We will be using this document as a starting point for our future discussions. If possible, we would appreciate comments by Friday, January 6. (The document is slightly longer than one page, so hopefully it would be a quick read).

Thanks!

Sara

<Transmission ARO Discussion.docx>

Attachment to Response to KU AG-1 Question No. 201 Page 1939 of 2028 Charnas

# Crescente, Angela

From:

Sent:

Wiseman, Sara Wednesday, December 28, 2011 11:05 AM Crescente, Angela Winkler's comments

To: Subject:

RE: Comments by RE: Comments by January 6 - Tr... January 6 - Ge...

Attachment to Response to KU AG-1 Question No. 201 Page 1940 of 2028 Charnas

# Crescente, Angela

From:

Hudson, Rusty

Sent:

Wednesday, December 28, 2011 10:16 AM

To: Subject: Crescente, Angela; Wiseman, Sara FW: Ash Pond Closure Estimates

For current valuation purposes. Rusty

From: Straight, Scott

Sent: Wednesday, December 28, 2011 10:07 AM

To: Hudson, Rusty

Cc: Heun, Jeff; Waterman, Bob; Watson, Joseph; Millay, David; Burns, Kyle; Wiseman, Sara; Williams, John; Winkler,

Michael; Revlett, Gary; Voyles, John **Subject:** FW: Ash Pond Closure Estimates

## Rusty,

After reviewing the 12/19/11 emails with Jeff Heun this morning, as well as going over the history of the estimates, please see Jeff's note to me that the \$120k per acre remains a valid number to use for ARO at this time given current regulations. This value is obviously a ROM estimate and not tailored to site specifics, but should be valid for the intended purpose.

We can revisit this later in the year if the regulations become more clear on future requirements or if guidance is obtained from the State on closing current ponds before new regulations are in effect.

# Scott Straight

Director, Project Engineering LG&E and KU Energy, LLC (502) 627-2701 <a href="mailto:scott.straight@lge-ku.com">scott.straight@lge-ku.com</a>

From: Heun, Jeff

Sent: Wednesday, December 28, 2011 9:47 AM

To: Straight, Scott

Subject: FW: Ash Pond Closure Estimates

#### Scott,

Based on current laws/regulations the cost to close our existing impoundments would be approximately \$120k per acre. I have reviewed the cost estimate provided to Property Accounting last year and everything is still accurate and required no changes. I have attached the cost estimate as a reference.

Attachment to Response to KU AG-1 Question No. 201 Page 1941 of 2028 Charnas



JBH

From: Heun, Jeff

Sent: Monday, December 19, 2011 3:44 PM

**To:** Hudson, Rusty; Millay, David **Cc:** Straight, Scott; Burns, Kyle

Subject: RE: Ash Pond Closure Estimates

Rusty,

My comments in red below.

**JBH** 

From: Hudson, Rusty

Sent: Monday, December 19, 2011 3:37 PM

**To:** Heun, Jeff; Millay, David **Cc:** Straight, Scott; Burns, Kyle

**Subject:** Ash Pond Closure Estimates

Guys, for purposes of the ARO valuation, I wanted to establish a few things to help me better answer Property Accounting's questions. Please let me know if the following are correct statements, or please answer them if worded as a question.

- The estimate to close ash ponds under existing rules/law is the \$120k per acre. Based on Stantec's estimate and understanding of the regulations. As an FYI the KYDWM and KYDOW has never closed an ash pond.
- If not for the new CCR rules expected to be announced in 2012, we would keep the existing ash ponds open, even while moving to landfills long-term. That is correct.
- Is there a distinction to be made between plants planned to be closed 1/1/16 and those planned to keep operating post 1/1/16 in terms of whether or not we would close the ash ponds under existing rules, if no new rules were expected? We did not make a distinction between pre 1/1/16 and post 1/1/16 pond closure. The costs are based on closing the ponds post EPA ruling.
- The estimate to close ash ponds under the expected new rules is the \$2.0m per acre. The costs would vary per site due to the size of the ponds and the available borrow material to cap the pond. Using Ghent as the basis should be acceptable.
- Is there a high level reconciliation that goes from the \$120k per acre to the \$2.0m per acre (in terms of what is driving the costs up so much)? Yes I have updated cost estimates

Rusty

Attachment to Response to KU AG-1 Question No. 201 Page 1942 of 2028 Charnas

Activity	2002 2010					
Activity	Cost	<b>Escalated Cost</b>	<b>Actual Cost</b>	Adjusted Costs	Units	
Engineering	\$0	\$0	\$250,000	\$250,000	1	
Construction						
Mobilization	\$21,000	\$33,471		\$33,471	1	
Site Grading	\$225,000	\$358,616		\$358,616	1	
1' Clay Cover	\$0	\$0	\$8	\$8	18000	
1' Vegetative Cover	\$0	\$0	\$6	\$6	18000	
Drainage Ditches	\$25	\$40		\$40	3500	
Seeding & Mulching	\$0	\$0	\$2,000	\$2,000	11	
Demolition	\$20,000	\$31,877		\$31,877	1	
Post Closure Care						
Ground Water Monitoring	\$2,480	\$3,953		\$3,953	1	
Maintenace	\$3,000	\$4,782		\$4,782	1	

Sub-Total

Bond

Contingency 20%
Total for 11 acres

**Total Per Acre** 

Attachment to Response to KU AG-1 Question No. 201 Page 1943 of 2028 Charnas

Total Cost
\$250,000
-
\$33,471
\$358,616
\$144,000
\$108,000
\$139,462
\$22,000
\$31,877
\$3,953
\$4,782
\$1,096,160

\$1,096,160 \$8,221 \$219,232 \$1,323,613 \$120,328.43

Attachment to Response to KU AG-1 Question No. 201 Page 1944 of 2028 Charnas

A ativita	2002		11:4	T-4-1 O4		
Activity	Cost	Escalated Cost Actual Cost		Adjusted Costs	Units	Total Cost
Engineering	\$0	\$0	\$250,000	\$250,000	1	\$250,000
Construction						
Mobilization	\$21,000	\$33,471		\$33,471	1	\$33,471
Site Grading	\$225,000	\$358,616		\$358,616	1	\$358,616
1' Clay Cover	\$0	\$0	\$8	\$8	18000	\$144,000
1' Vegetative Cover	\$0	\$0	\$6	\$6	18000	\$108,000
Drainage Ditches	\$25	\$40		\$40	3500	\$139,462
Seeding & Mulching	\$0	\$0	\$2,000	\$2,000	11	\$22,000
Demolition	\$20,000	\$31,877		\$31,877	1	\$31,877
Post Closure Care	•					
Ground Water Monitoring	\$2,480	\$3,953		\$3,953	1	\$3,953
Maintenace	\$3,000	\$4,782		\$4,782	1	\$4,782

Sub-Total \$1,096,160

Bond \$8,221

Contingency 20% \$219,232

Total for 11 acres \$1,323,613 Total Per Acre \$120,328.43 Attachment to Response to KU AG-1 Question No. 201 Page 1945 of 2028 Charnas

# Crescente, Angela

From:

Jones, Greg

Sent:

Thursday, December 22, 2011 11:28 AM

To: Cc: Crescente, Angela Mooney, Mike (BOC 3)

Subject:

RE: Paddy's and Canal 108 Estimate

Angela,

We probably have not looked at this in that detail for those out years. We do know that asbestos and other hazardous material abatements have an extremely heavy toll on the cost.

If you have to have a guestimate, you might use 50% as the cost related to asbestos abatement.

Thanks GWJ

From: Crescente, Angela

**Sent:** Thursday, December 22, 2011 11:17 AM **To:** Mooney, Mike (BOC 3); Jones, Greg **Subject:** RE: Paddy's and Canal 108 Estimate

Mike and Greg,

I'm sorry, I should have also asked you if you have estimated asbestos removal numbers for each plant for the remaining years of the LTP?

Thanks, Angela

From: Mooney, Mike (BOC 3)

Sent: Thursday, December 22, 2011 10:42 AM

To: Crescente, Angela

Subject: FW: Paddy's and Canal 108 Estimate

Angela,

According to the engineer below, 50% of Paddy's (\$1.25M) and 50% of Canal (\$762k) will be for asbestos removal.

If you need anything else, just let me know.

--Mike

From: Jones, Greg

Sent: Thursday, December 22, 2011 10:32 AM

To: Mooney, Mike (BOC 3)

Subject: RE: Paddy's and Canal 108 Estimate

Attachment to Response to KU AG-1 Question No. 201 Page 1946 of 2028 Charnas

# Crescente, Angela

From:

Hudson, Rusty

Sent: To: Monday, December 19, 2011 3:51 PM Crescente, Angela; Wiseman, Sara

To: Subject:

FW: Ash Pond Closure Estimates

I think this answers the basic questions – that under existing rules/laws we would not be obligated to close the ponds, and that the estimate is the \$120k per acre. Under the future, expected rules, that is what is driving the obligation to close and the \$2.0m estimate. Rusty

From: Heun, Jeff

Sent: Monday, December 19, 2011 3:44 PM

**To:** Hudson, Rusty; Millay, David **Cc:** Straight, Scott; Burns, Kyle

Subject: RE: Ash Pond Closure Estimates

Rusty,

My comments in red below.

JBH

From: Hudson, Rusty

Sent: Monday, December 19, 2011 3:37 PM

**To:** Heun, Jeff; Millay, David **Cc:** Straight, Scott; Burns, Kyle **Subject:** Ash Pond Closure Estimates

Guys, for purposes of the ARO valuation, I wanted to establish a few things to help me better answer Property Accounting's questions. Please let me know if the following are correct statements, or please answer them if worded as a question.

- The estimate to close ash ponds under existing rules/law is the \$120k per acre. Based on Stantec's estimate and understanding of the regulations. As an FYI the KYDWM and KYDOW has never closed an ash pond.
- If not for the new CCR rules expected to be announced in 2012, we would keep the existing ash ponds open, even while moving to landfills long-term. That is correct.
- Is there a distinction to be made between plants planned to be closed 1/1/16 and those planned to keep operating post 1/1/16 in terms of whether or not we would close the ash ponds under existing rules, if no new rules were expected? We did not make a distinction between pre 1/1/16 and post 1/1/16 pond closure. The costs are based on closing the ponds post EPA ruling.
- The estimate to close ash ponds under the expected new rules is the \$2.0m per acre. The costs would vary per site due to the size of the ponds and the available borrow material to cap the pond. Using Ghent as the basis should be acceptable.
- Is there a high level reconciliation that goes from the \$120k per acre to the \$2.0m per acre (in terms of what is driving the costs up so much)? Yes I have updated cost estimates

Rusty

Attachment to Response to KU AG-1 Question No. 201 Page 1947 of 2028 Charnas

# Crescente, Angela

From:

Puckett, Paul

Sent:

Thursday, December 15, 2011 11:34 AM

To:

Crescente, Angela

Cc:

Trimble, Robert; Wiseman, Sara; Birchell, Brent

Subject:

RE: Bushings

#### Angela,

From the data I have (only about 450 records for analyses between 2001 and 2011), about 27% of all bushings are PCB regulated (i.e. the PCB concentration is 50 ppm or more).

I think I'd use about 35%, just to be conservative.

#### W. Paul Puckett

Engineer - Environmental Affairs Department LG&E and KU Energy (Louisville Gas & Electric, Kentucky Utilities, and Old Dominion Power) 220 West Main Street P.O. Box 32010 Louisville, KY 40232 (502) 627-4659 (502) 217-4836 (facsimile) (502) 648-7842 (mobile)

Please note the recent change in e-mail address: paul.puckett@lge-ku.com



From: Crescente, Angela

Sent: Thursday, December 15, 2011 11:05 AM

To: Puckett, Paul

Cc: Trimble, Robert; Wiseman, Sara; Birchell, Brent

Subject: Bushings

#### Paul,

We just met with Shannon in regards to setting up AROs for the PCB in bushings and are trying to decide between the 30% and the 50%. I spoke with Robby and he said that you were more familiar with the percentage and that 30%-40% was probably more accurate. Shannon would like to have support for the percentage we choose to use. For example, based on our past history with the retirement of bushings, approximately X% of the bushings were determined to have PCB material in them. You mentioned double-checking the database to be comfortable with your estimate. Would you be able to verify a good percentage and explain why you feel that percentage is OK to use?

Thanks,

Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1948 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Thursday, December 15, 2011 11:05 AM

To:

Puckett, Paul

Cc:

Trimble, Robert; Wiseman, Sara; Birchell, Brent

Subject:

Bushings

Paul,

We just met with Shannon in regards to setting up AROs for the PCB in bushings and are trying to decide between the 30% and the 50%. I spoke with Robby and he said that you were more familiar with the percentage and that 30%-40% was probably more accurate. Shannon would like to have support for the percentage we choose to use. For example, based on our past history with the retirement of bushings, approximately X% of the bushings were determined to have PCB material in them. You mentioned double-checking the database to be comfortable with your estimate. Would you be able to verify a good percentage and explain why you feel that percentage is OK to use?

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1949 of 2028 Charnas

## Crescente, Angela

From:

Pence, Mark

Sent:

Monday, November 14, 2011 9:15 AM

To:

Wacker, Diana

Cc:

Crescente, Angela; Cosby, David; Dowd, Deborah; Welsh, Elaine

Subject:

RE: Journal Entry Information

Diana,

Please copy me on the journal entry so I know the dollar amount. Thanks.

## Mark A. Pence

Budget Analyst - Mill Creek Station

Phone: 933-6805

From: Wacker, Diana

Sent: Monday, November 14, 2011 9:03 AM

To: Pence, Mark Cc: Crescente, Angela

Subject: Journal Entry Information

#### Mark:

I am doing a journal entry today to move the charges that are on Project AROMCO231 from account 108799 to 108901. Angela and I have talked about these charges and the ARO's at Mill Creek. We believe these charges were originally intended for the removal of some tanks that were taken care of during the revaluation and are no longer set up on the books as ARO's.

I wanted to give you some advance warning of the charges moving between accounts.

Thanks, Diana

Attachment to Response to KU AG-1 Question No. 201 Page 1950 of 2028 Charnas

# Crescente, Angela

From:

Stratman, Paul

Sent:

Monday, November 14, 2011 8:19 AM

To:

Crescente, Angela

Subject:

RE: Gas Mains and Regulator Facilities

The regulator pits, stations and assemblies are included in the system abandonment I put together for the distribution system.

From: Crescente, Angela

Sent: Thursday, November 10, 2011 4:09 PM

To: Stratman, Paul

Subject: Gas Mains and Regulator Facilities

Paul,

As you will be hearing more about tomorrow during our meeting, we have identified some AROs that should have been recorded previously. The Gas Regulator Facilities (regulator pits and stations) were brought to our attention due to a question we received from someone when we sent out the quarterly ARO questionnaire. Is there any possibility that you included these in with the cut, cap and purge of Gas Distribution Mains when we asked you to come up with a new estimate in September of last year since they are distribution cut, cap and purge as well? If not, we will need to set them up. Please advise as we just want to make sure we are not double-counting.

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1951 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Friday, November 11, 2011 1:50 PM

To: Subject:

Zwanzig, Darrell RE: 108799

Tracking:

Recipient

Zwanzig, Darrell

Read

Read: 11/11/2011 2:24 PM

Darrell,

The Oracle GL and PowerPlant account description is 108799 – RWIP-ARO LEGAL. The product code is also different than the 108901 account. Instead of 131 for gas work, it should be 554. If it is for electric work, it is 354 instead of 122.

Thanks, Angela

From: Zwanzig, Darrell

Sent: Friday, November 11, 2011 10:53 AM

**To:** Crescente, Angela **Subject:** 108799

Angela,

What is the PowerPlant description of account 108799?

Thanks,

Darrell Zwanzig
Lead System Administrator
LGE-KU
darrell.zwanzig@lge-ku.com
502-627-3168 - Office
502-664-5807 - Cell
502-217-2715 - Fax

Attachment to Response to KU AG-1 Question No. 201 Page 1952 of 2028 Charnas

## Clark, Ed

From:

Wiseman, Sara

Sent:

Thursday, June 16, 2011 2:25 PM

To:

Crescente, Angela

Subject:

RE: ARO Quarterly Questionnaire.docx

I guess I will start shopping it around.

From: Crescente, Angela

Sent: Thursday, June 16, 2011 2:22 PM

To: Wiseman, Sara

Subject: RE: ARO Quarterly Questionnaire.docx

Looks good to me.

From: Wiseman, Sara

Sent: Thursday, June 16, 2011 1:38 PM

To: Crescente, Angela

Subject: ARO Quarterly Questionnaire.docx

<< File: ARO Quarterly Questionnaire.docx >>

Here is my first pass. Comments are welcome—but need them quickly....

Attachment to Response to KU AG-1 Question No. 201 Page 1953 of 2028 Charnas

## Clark, Ed

From:

Sent:

To:

Subject:

Wiseman, Sara Thursday, June 16, 2011 1:38 PM Crescente, Angela ARO Quarterly Questionnaire.docx



ARO Quarterly Questionnaire.d...

Here is my first pass. Comments are welcome—but need them quickly....

Attachment to Response to KU AG-1 Question No. 201 Page 1954 of 2028 Charnas

## **ARO Quarterly Questionnaire**

Please answer the following questions.

1. To the best of your knowledge, are you aware of any changes that would impact the valuation of the asset retirement obligations ("AROs") that have been identified? Such changes may include changes in laws, statutes, regulations, precedents set by the Company, contracts, permits, certificates of need, right of way agreements, market costs or available resources for remediation, or planned retirements. (Please list)

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2. To the best of your knowledge, are you aware of any acquired assets, land, or leases that will create an ARO? (Please list, include location)

#### Answer:

3. To the best of your knowledge, are you aware of any new construction that will create an ARO? (Please list, include location)

#### Answer:

4. In certain very limited circumstances the Company could be determined to be obligated to retire an asset or a group of assets based upon a commitment made to a third party. Are you aware of any communications either written or verbal between representatives of LKE and third parties with respect to retirement of an asset or a group of assets owned by LKE at the end of operations or a specific point in time? If so, please list the identities of the LKE representatives and assets involved, as well as the third party or parties who were involved and the context in which the discussions took place.

Answer:			
Completed by:	 	 	

Attachment to Response to KU AG-1 Question No. 201 Page 1955 of 2028 Charnas

## Clark, Ed

From:

Charnas, Shannon

Sent:

Thursday, June 02, 2011 9:38 AM

To: Cc: Wiseman, Sara Crescente, Angela

Subject:

RE: ARO quarterly questionnaires

I would go ahead and work under the draft policy and send the questionnaire.

Thanks,

#### Shannon Charnas

Director, Accounting & Regulatory Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Thursday, June 02, 2011 9:36 AM

**To:** Charnas, Shannon **Cc:** Crescente, Angela

Subject: ARO quarterly questionnaires

#### Shannon:

The proposed ARO policy states we are doing quarterly ARO questionnaires. (FYI--PPL does only annual.) Since the policies are still under development, should Angela and I go ahead and send one out for June or wait. Please let us know.

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886

Attachment to Response to KU AG-1 Question No. 201 Page 1956 of 2028 Charnas

## Clark, Ed

From:

Wiseman, Sara

Sent:

Thursday, June 02, 2011 9:36 AM Charnas, Shannon

To: Cc:

Crescente, Angela

Subject:

ARO quarterly questionnaires

#### Shannon:

The proposed ARO policy states we are doing quarterly ARO questionnaires. (FYI--PPL does only annual.) Since the policies are still under development, should Angela and I go ahead and send one out for June or wait. Please let us know.

Sara Wiseman Manager, Property Accounting Office 502.627.3189 Cell 502.338.0886

Attachment to Response to KU AG-1 Question No. 201 Page 1957 of 2028 Charnas

#### Clark, Ed

From:

Crescente, Angela

Sent:

Friday, May 13, 2011 9:21 AM

To: Cc: 'Josh Hirschel' Jim Ogilvie

Subject:

RE: ARO Report

Josh,

I went ahead and asked Jim to help me while he was on-site with us this week, but I am not sure that he has been able to look at it. He has been pretty busy with other stuff of ours. So, Jim has copies of the things I need help with so maybe if you are both in the office today, you could see how far he has gotten on it and if he hasn't been able to look at it, maybe he can give you the copies and you can call me sometime today like you said below. Just let me know.

Thanks, Angela 502-627-2524

From: Josh Hirschel [mailto:jhirschel@pwrplan.com]

Sent: Wednesday, May 11, 2011 10:14 PM

**To:** Crescente, Angela **Subject:** RE: ARO Report

Sorry for the delay Angela... I have been in all day meetings from Mon-Thursday this week. If you can shoot me an email regarding the issue I will try to help; otherwise, I can give you a call on Friday.

Thanks, Josh Attachment to Response to KU AG-1 Question No. 201 Page 1958 of 2028 Charnas

## Clark, Ed

From:

Sent:

Wacker, Diana Thursday, May 12, 2011 9:04 AM Rose, Bruce Crescente, Angela ARO settlements

To: Cc:

Subject:

Bruce: Could you please look at the 108901 on project 122114 to see if any of this can be moved to the aro 108799?

Thanks, Diana

Attachment to Response to KU AG-1 Question No. 201 Page 1959 of 2028 Charnas

#### Clark, Ed

From: Sent: Josh Hirschel <jhirschel@pwrplan.com> Wednesday, May 11, 2011 10:14 PM

To: Subject: Crescente, Angela RE: ARO Report

Sorry for the delay Angela... I have been in all day meetings from Mon-Thursday this week. If you can shoot me an email regarding the issue I will try to help; otherwise, I can give you a call on Friday.

Thanks, Josh

From: Crescente, Angela [mailto:Angela.Crescente@lge-ku.com]

Sent: Tuesday, May 10, 2011 2:34 PM

**To:** Josh Hirschel **Subject:** ARO Report

Hey Josh,

I'm sorry to bother you, but you have helped me so much before and you always seem to understand what I am asking when I have questions (and you know how difficult ARO language can be sometimes). Would you please call me when me you get a chance so I can ask you a question about one of my ARO reports? It is causing me to be out of balance between the report and the General Ledger and I was hoping there was a way to fix it.

Thanks,

Angela

502-627-2524

NOTE: The extension for all E.ON U.S. e-mail addresses has changed from @eon-us.com to @lge-ku.com. Please update your address book accordingly.

The information contained in this transmission is intended only for the person or entity to which it is directly addressed or copied. It may contain material of confidential and/or private nature. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is not allowed. If you received this message and the information contained therein by error, please contact the sender and delete the material from your/any storage medium.

Attachment to Response to KU AG-1 Question No. 201 Page 1960 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Tuesday, January 11, 2011 9:33 AM

To:

'eonaudit@us.pwc.com'

Cc:

Wiseman, Sara

Subject:

I.F.9

Please see the attached:



ARO Rollforward LGE KU Balanc...

Thanks, Angela

Attachment to Resp	onse to KU	AG-1 Qu	estion No.	20

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Louisville Gas and Electric Company ARO Rollforward Schedule - 2010

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Attachment to Response to KU AG-1 Question No. 201 Page 1962 of 2028 Charnas

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## Attachment to Response to KU AG-1 Question No. 201 Page 1963 of 2028 Charnas

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(24,744,93) 6,350,155,09 (0,004,778,19) 733,655,91 2,2886,450,20
(192,308.02) (24,744.05) (192,308.02) (192,308.03) (192,3
(184,290,09) 15,28 15,28 18,590,185,00 G,079,175,077 Z,388,4400,00 G95,777 Z
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(05.841,528) - (54.862,728)

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		19,320,50	•				•		•			,		(19,326,50)
•	•	•	•	•		(19,009,20)	•	19,909,20	•	•			•	
31,088,451,54	(6,095,296,32)	259,384,27	2,389,400.00	(50,512,212,02)	34,511,055,80	(4,341,217,11)	3,052,482,10	1,952,816,51	1,183,545.92	(3,052,482,10)	(1,163,545,92)	,		759,384,277
		٠		(222,740,95)	222,740.95		222,740.05			(222,740.95)	,		,	
•	(244,908,80)		1		244,008.80		•	•	244,906,80		(244,908,80)	,	,	
22,438,432,03	6,095,298,32	,	•	5,977,328,45	(04,511,058,80)		•	•	•		•		,	
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52,917,584,20	(742,588,05)	240,057,77	2,368,400.00	(53,757,624,52)	1,082,648,37	(4,361,126,31)	272,740,95	1,972,725.71	244,908,90	(222,740.95)	(244,908.80)	•	,	240,057,77
•	•	1		(223,681,89)	223,661.69	•	223,681,89			(223,681,89)			٠	
•	(245,263.00)	,	•		245,203.00	,	•	•	245,203,00	•	(245,293,00)	,	,	
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•	,	47,203,69		•	•	1	٠	•	•	•	•			(47,203,09)
	,	•	,	•		(19,009,20)		19.000.20	,	1			•	

Attachment to Response to KU AG-1 Question No. 201 Page 1965 of 2028 Charnas

## Crescente, Angela

From:

Crescente, Angela

Sent:

Thursday, January 13, 2011 5:36 PM

To:

'eonaudit@us.pwc.com'

Cc:

Wiseman, Sara

Subject:

FW: I.F.9 - revised

Please see the attached:



ARO Rollforward LGE KU Balanc...

This rollforward was revised for minor changes within the spreadsheet. Balances remain the same.

Thanks,

Angela

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COR. Parent Loove Ceathment Cettement Cettemen	102/97/2/200 11 102/102/102/	(1,470.8) (1,470.8)	(\$7,638,44) (\$7,638,447,59) (\$6,198,29)	(27,772, 47,772)	(115,596,50) (280,390,70) (1,501,481,18)	(161,122.59) (766,200,77)	(051,090,10) (021,051,051,051,051,051,051,051,051,051,05	(102,572,97) (102,572,97) (200,30,79) (2,416,500,52)	(37.0643.18)	(02.096.615). (47.006.099)
COR Inneri 10Bear Inflement 103,467,35								.		
Dept Regulatory Cr 407421 - 407422 h 407425 - 407427 C (228,607.99)	(14,830,76)	(14,630,77) - - - - -	(14,000,74) (48,910,27) (48,510,32)	(14,039,75) (84,534,02)	(14,030,74)	(14,039,74) (97,638,59)	(14,639.78)	(14,636,70)	(27,130,11) (457,450,11) (1,238,82) (1,238,82) (500,840,76)	(83,224,18)
Acer Resulatory Cr 407401 - 407402 407405 - 407407 (1,889,78074)	(104,503,41) (164,503,41)	(165,366,02)	(100,217,001) (100,217,001)	(167,046,30) (093,706,30)	(167,000,30) (1631,000,20)	(168,720.88) (168,811.17)	(100,047,22) (100,064,97) - - (0,100,370,14)	(170,413,20) - - - (1,014,746,42)	(171,286,77) (1,162,845,81) (1,106,676,97)	(17:40471) (17:40471)
Depreciation Experime 403111-40311 400211-12,403311 235,967.60	14,636,76 14,639,76	77,630,77	14,009,74 43,019,27	14,036.75 - 36,539.07	14,000,74	14,639,74 57,838,50	45,919,23, 14,036,70 102,477,20	14,039,70	21,130,11 425,281,02 1,230,02 1,230,02 694,7730,07	470,889.57 03.254.18 32.202.80
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zzedon Cocenso 11150-411151 11155-411157 1,660,730,12	184,563,41	185,388,82 329,956,03	100,273,02	167,045.35	107,000,80	166,720,88	503,647,22 168,504,97 1,160,376,14	170,413,28 1,330,789,42	174,245,74 1,162,845,84 	1,074,099,996 178,6951,78
Regulatory A Labbillies 4 for 4 * 25.4016 4 3,075,128,04)	(0.008.01)	(9,099,91) 3,063,324,99)	(8,088,07) (8,102,452,87) (37,234,03)	(0.000,01) (3,111,520,04)	(6,099.01) (2,120,616.00)	(8,380,84) (8,129,008,93)	(20,585,65) (7,790,80) 3,136,716,73)	7.779.05) 3.144.554.70)	0.739.18)	(20,124,00)
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Cole Arc (abilities Reg Parel 20012/13/57 102 (100-20022/23/57 102 (2001 914 80 (33,045,679,14)	(104,503,41)	(165,386,62)	(160,213,02)	(167,045,35)	(107,800,40)	(166,720,88)	(160,564.07) (160,564.07) (54,273,005.28)	(170,413.28)	(171,205,76) (30,441,454,91) 21,090,35 (04,874,252,91)	(05,1450,051,700) (07,1250,051,700)
COR Parent 100xxx implementation 2,881,914.68	2,881,914.88	2,681,914,00	2,881,914,68	2,881,914,66	2,887,914,68	2,681,914,08	2,861,914.68	2,881,014,98	2,881,014,08	2,881,914,89
RWID-ARO Legal 1087as 1692,377.20	1,092,378,28	1,470,84	37,638,44 1,731,487,29 30,109,28	44,577,72	115,596,90	181,122.63	251,009,15 231,300,64 2,313,927,65	102,072.97 2,416,600,62	79,840,16 2,486,440,76	413,467,67 247,428,00 2,743,006,78
Acount Deprec 106/107,117,8-126 108207,8228,108355 (5,086,272,83)	(14,639.78)	(14,030,77) (3,117,502,30)	(14,039,74) (3,132,002,10) (43,619,27)	(14,030,75)	(14,039,74) (14,039,74) (3,161,46),60)	(14,020,74) (61,778,73,33)	(42,016,27) (14,639,76) (3,100,761,00)	(14,630,70)	(23,130,11) (425,231,102) 2,001,03 - (3,040,770,000)	(475,699,67) (90,224,19) (30,222.00) (30,222.00) (3,476,129,20)
. Aric/Asses (01-074,10132 (01-071,10128,101325 0.532,499.00	00 488 2X9 8	00 ter 225 9	त्त्र कुछ है जिल्हें -	00/009-2555 0		co de Pasa a	0.0 (487 2003 4)	90 007 ZISS'9	01.000,872.00. (0,000,872.00. (0,000,872.00. (0,000,872.00.00.	03/007/12/15 (05/007/12/20)* (1) 01/007/12/202
Ending Dalance Dectol/4th Quarter	January Activity ARO Aceration ARO Depression Acoure COR Ending Balance Janto	Fabrusry Activity ARO Abcordion ARO Captrocation ARO Captrocation ARO Extra Contraction Active COR Ending Desence Pablo	March Activity ARD Accordin ARD Descriation ARD RWIN ARD RWIN ARD RWIN Encling Distracts Mart Orlet Quarter Total Activity 1st Quarter	April Activity ARO Accretion ARO Depreciation ARO Style Accretion CRAP Accretion CRAP Ending Balance April	Nay Activity ARO Accention ARO Depreciation ARO Branch ARO RWIP ACTIVE OFF	Juna Activity ARD Accretion ARD Expression ARD KNyP Active COR Expling Dalance JunfolZnd Quarter Expling Dalance JunfolZnd Quarter	Tetal Activity 2nd Quenter Juny Activity ARO Accordison ARO Environitation ARO Environitation ARO Environitation ARO Environitation ARO Environitation ARO Environitation	August Activity ARO Augustion ARO Exprocision ARO Exprocision Actoric COR Actoric COR Ending Distance Aug10	Geptember Activity ARO Accordien ARO Accordien ARO Severation ARO Severation ARO Severation ARO Severation ARO Severation ARO Severation According Contract Ending Cultures Septibited Cuenter	Total Activity and Quanter Cotal Activity and Quanter ARD Accordation ARD Concretation ARD Sequentiation

Attachment to Response to KU AG-1 Question No. 201

Attachment to Response to KU AG-1 Question No. 201 Page 1967 of 2028 Charnas

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,			•				(560,000,79)	•	•	•	•		726 306 705
			•		•			•	•		•		
,	(244,628,10)	140,783,04	090,164,84	•	•	,	(103,844,46)	•	(50,632.78)	(140,783,04)	•	,	(295,460,88)
(216,705,73)			2,849,562,80	•	•	•	(2,16,795,73)	(217,727,10)	•	,	,		1434 522 831
	244.626.10	(140,783,04)	(690,164,94)				103,644,48		50,832,76	140,783,94			298 460.88
,		•				7.741.99	652,000,22		•		,	7,747.58	659.815.78
210,705,73		,	(2,849,582,60)	•			276 793,73	247,727,10	,		•		434,522,83
						(7,741.00)	(0.167,676,94)		•			(7,747.58)	3,176,424,50)
218,795,73	244,628,10	(28,113,604,70)		(145,450,41)			6,425,095,98	217,727,10	106,288,10		•		6.830,111,27
(276,796,73)		12,933,665.01	•				(52,433,061,61)	(217,727.10)		•	٠	•	(52,650,788,91)
			•	,			2,881,914,08		,	,	•	٠	2,881,914,08
					103,211.99		2,847,078,77		•		55,469.99		2,805,645,76 2,881,914,08
	(244,628,10)	3,478,126,21	•	145,455,41	•		(60.271.69)		(198,288,19)	•	•		(295,460,88)
	,	11,702,089,84	•		•	•	46,107,138,54	•			•		46 107 138.54

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ARO Rollforward Schedule - 2010	Novembor Activity ARO Actretion ARO Expression ARO Purpression	VS Reset for Acquisition ARQ Replace ARQ RWIP Acords COR Ending Dalance Nov10	December Activity ARO Apprelian ARO Depreciation

## Attachment to Response to KU AG-1 Question No. 201 Page 1968 of 2028 Charnas

Ending Balance Doc60/4th Quarter	ARO Assets 101107 & 101125 1930,350,67	Avount Dopine RVMP-AI(O) Legal COR. 100107 8 106125 106706 Dener 100000  77 (4,000,011.14) 240,720.15 2,309,400.0	105786 Cogal COR 105786 Purent 105xxx (105xxx 1mp/mentation 246,770,15 2,338,400.00		ARO (Jabilitos Reg 230072,13,15 230022,23,25 (34,365,307,65)	Regulatory Assets 182317 2-182318 162325 254 29,870,259,17	Regulatory Acc (Labilities 411 254014 - 254016 (4,142,125,13)	Accellor Expanse Dep 411150 411151 411155 2,108,194,09	Depreciation Expense Parent 403114.0315 400xx 17.53,724.53 299,744.9	100000年2000000 - III	Acer Repulatory Co. Dept. 407401 - 407402 407 407405 (2,109,194,69)	Dept Regulatory Cr 407421-407422 Ne- 407423 1 78677428 56 7867744 89 30	COR COR Non-Parent Parent 108xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	OR Cash Noc emni - (553,767,73	
January Activity ARO Accretion ARO Depositation ARO RYVIP ACCUS COST	(176.59) (176.59)	(24,858.60) - 176,50 (4,979,983,22)	(14.899.24) 721.839.81	2,388,400,00	(180,473,35) 14,856,74 (34,530,644,70)	180,473,38 24,858,86 (14,835,24) 30,190,734,89	(10,009.20)	180,479,35	16,908.20 1,773,638,73	24,858.85	(180,473,39)	(24,858.60)	14,838,24	108 (122)	(6.89)
Fabruary Activity ARO Accretion ARO Expendation Accute COR Ending Galance Fob10	0,250,183,09	(24,744,96)	16'828'162	2,368,400,00	(181,352,55)	181,352.55 24,744,86 30,365,852,40	(19,109,20)	181,352,55 361,829,90	19.000.20	24,744,96	(181,362.56)	(24,744.08)		(231888	
March Activity ARO Accretion ARO Depreciation ARO Depreciation ARO Depreciation Accretion College and Accretion Total Activity 1st Quarter	9,330,033,00	(24,744.05) (5,029,450,13) (74,548,57)	(14,198,24)	2,398 400.00	(182,306,62) - (34,884,603,03) (559,297,28)	182,308,02 24,744,65 30,573,908,97 603,844,86	(19.209.20) (4.201.852.73) (86.727.90)	182,706.82 - 544,137,52 544,137,52	1833,452,13 1833,452,13	24,744,85 74,340,67 74,348,67	(182,300,62) (344,132,92) (944,132,62)	(74,744,95) (74,346,57) (74,346,57)	14,806,24	19.030 (1822)	, , , (g)
April Activity ARO Accordin ARO Depreciation ARO By Ny P Accord COR	9,390,185,09	(24,744,89)	8,088.00 2,0077,51	2,386,400,00	(183,298,83)	183,265.83 24,744.99 30,781,914,79	(4.221,791,83)	183,285,83	18.6020	24,744,96 - 99,093,50	(183,269,63)	(24,744,98)		(6,088,60)	(0.00)
May Activity ARO Accretion ARO Depreciation ARO RWIP ACTIVITY ACTIVITY Ending Balance May10	99.531.685.6	(24,744,90)	36.28 240,007,77	2,388,400,00	(184,230,08)	184,230,08 24,744,90 - 30,890,890,77	(19,009,20) (6,241,671,13)	104,230,08	18 500 20 1,853,770,53	24,744,80 - 123,838.40	(184,230,08)	(24,744,60)		(35.20) (77.770)	න (ය (මා
Jama Aastekty AGA Accordian ARCO Depocabilian ACCOR STAP Accord SCAP Ending Balance Junt/02nd Quarter Total Activity Zho Quarter	00'cs1'068'6	(24,744,95) (9,103,717,87) (74,724,84)	240,007,77	2.388.400,00	(185,186,30) (35,447,786,20)	169,100.36 24,744,95 31,200,834,00 626,850,11	(18,809.20) (4,801,840.30) (56,727.80)	185,190,38 1,000,827,70	16 900 20 1873/179/73 1873/79/30	24,744,85 - 140,383,41 74,234,84	(186,190.08) (1,000,027.77)	(24,744,95) (148,553,41) (74,754,84)	e de la constanta de la consta	(7.00,067.77)	 8 8 8
July Activity ARO Accretion ARO Despondention ARO RIVIIP Accruse COR Ending Balance Juli 0	60 ca1 / 062 d	(24,744,97)	740,087,77	2,288,400,00	(186,172,78)	180,173,78 24,744,97 31,411,752,83	(19.599.20) (4.281.489.53)	1289,001,57	10.800.29	24,744,07 - 173,328.30	(186,173.76) - - - - - - - - - - - - - - - - - - -	(24,744,07)	Active Territor	(7,40,067,77)	· · · · · · · · · · · · · · · · · · ·
August Activity ARO Accretion ARO Deprendation ARO KWIP Accrue COR Ending Balance Augto	60,037,085,6	(24,744,03)	740,057,77	2,338,400,00	(107,143,30) - - (06,870,826,345)	187,153,36 24,744,53 31,623,831,12	(19,000,20)	187,158,36	18,890,20 1912,898,13	24,744.53	(187,153,30)	(24,74,63)	• • 1 • •	77.770,045	(090)
Soptomber Activity ASO Accordin ASO Depretation ASO Requisition ASO Soldiments ASO Soldiments ASO Soldiments ACCORDING Forth Activity and Quarter Total Activity and Quarter	22,221,017.05 (12,840.00) 31,659,200,02 27,300,017,63	(24,550,02) (674,401,84) (7210,50 (0,045,015,17) (1,045,015,17)	77.760.092	7,388,400,00	(188,138,12) (23,530,960,08) 215,367,79 (50,347,256,75)	188,138,12 24,538,02 2,111,791,27 (211,798,33) 33,736,401,18 2,535,567,10	(16,809.19) (4,821,307,01)	1,232,042,55 1,232,042,55 2,890,336,60 1,739,507,81	19 90b 18 1,602,907.33 56,727.88	24,550.02 874,461.84 3,620,44 1,100,723.61	(188,138,12) (1,232,042,59) - - (2,890,335,80) (1,735,807,71)	(24,556.02) (879,748.72) (3,629.44) (1,106,010.49)	Tiporitina and the state of the	Z. (240,057)	0000
Ostober Activity ARO Accretion ARO Depreciation		(57,535,43)	1 5		(162,146,50)	162,146,50 57,535,43		162,140.50	1 1	57,535,43	(162,146,50)	(57,535.43)			

E) Grander	•	٠	•	•	(0:00)	•	,	•	0,00	٠	•	)	(0.00)	٠	•	1	٠	W W
Cash		•	(19,328,50)	•	(259,384.27)	•	•	•	•	•	19,326,50		(7,40,057,77)	•	٠	(47,203,69)		Anna anna anna
COR Parent Obbes	,	•	•	•	,	•	•	•	,	•	,	•	,	٠	•	•	•	
COR Non-Parent 109xxx	,	,					٠	•		,	•	•				,		
Depr Regulatory Cr 407421 - 407422 407425		•	•		(1,163,546,02)		(244, 908,00)	•	1,163,545.02			•	(244,008,80)	•	(242, 197, 89)		•	107 404 707
Accr Regulatory Cr 1 407401 - 407402 407405		•			(3,052,482,10)	(222,740,35)		•	3,052,482,10	•	•	•	(722,740,95)	(223,881,80)		•	•	AND CAN BAN
oreclation Expense A	5,286,88			•	1,163,546,92		244,908.80	•	(1,163,545.82)			•	244,908,80		242,197,09		,	AR7 408 40
Accrution Expense Depreciation Exp. Depreciation Expense 41150 - 41151 - Perent 411155 - 411155 - 403xxx		•	•	10,909,20	1,952,818,51	•			•			19,909,20	1,972,725,71	٠	•	•	19.909.20	1 000 834 04
Accrelion Expense C 411150-411151 411155	•	1			3,052,482,10	222,740,95	•	•	(3,052,482,10)				222,740,96	223,681,89	•		•	AAB 422 BA
Regulatory / Liabilities 254014 - 254015		•		(10,000,20)	(4,341,217,11)					•		(19,909,20)	(4,381,128,31)	•	•		(19,909,20)	At Sud Oth Res
30gulalory Auseta 182317~182318 182325		654,973,69			34,511,036,80	222,740.05	244,908,80	(33,893,737,43)		(2,320,75)		•	1,082,648,37	223,681.89	244,518,44			1 550 848 70
ARO Liabilities F 230012,13,15 230022,23,26	(2,708,77)				(99,512,212,02)	(222,740,95)		5,977,328,45		•	•	1	(63,757,024,52)	(223,081,89)		•	1	743 GR1 208 A11
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Accum Deprec RV 108167 & 108125	(5,256,88)	10,344,16	•	•	(6,095,296,32)		(244,306.80)	6,095,296,32	•	2,320,75	•		(242,088.05)		(244,618,44)	•	•	AB7 408 AB1
ARO Assess 101107-8, 101126	2,708,77	(565,517,85)	•	,	31,098,451,34			21,621,112,66	•	,			52,917,564,20			•	•	62 047 584 TO

#### Attachment to Response to KU AG-1 Question No. 201 Page 1970 of 2028 Charnas

#### Crescente, Angela

From:

Crescente, Angela

Sent:

Tuesday, January 18, 2011 10:44 AM

To: Cc: Leichty, Doug Wiseman, Sara

Subject:

RE: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

**Attachments:** 

ARO Rollforward LGE KU Balance Ended Dec 10 for auditors.xls

OK, I am going to hand-deliver the Discoverer Reports for LGE and KU for DEC-2010. Please see the attached rollforward as you requested.

Thanks, Angela

From: Leichty, Doug

Sent: Tuesday, January 18, 2011 10:39 AM

To: Crescente, Angela

Subject: RE: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

Yes. Thanks.

From: Crescente, Angela

**Sent:** Tuesday, January 18, 2011 9:46 AM

To: Leichty, Doug

Subject: RE: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

Do you want the Discoverer report for only DEC-2010?

From: Leichty, Doug

Sent: Monday, January 10, 2011 7:29 AM

To: Crescente, Angela

Subject: RE: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

The reason for this monthly file is to calculate thirteen month average balances. The Discoverer report is also helpful and if it is not too much trouble I would like that also. Thanks.

From: Crescente, Angela

Sent: Sunday, January 09, 2011 2:56 PM

To: Leichty, Doug

Subject: RE: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

Doug:

This replaces the piece of paper with ending balances that I used to give you because everything is on here, right? Or are you going to still need the Discoverer report that I used to give you as well?

Thanks,

Angela

## Attachment to Response to KU AG-1 Question No. 201 Page 1971 of 2028

Charnas

From: Leichty, Doug

Sent: Wednesday, December 29, 2010 9:35 AM

**To:** Crescente, Angela **Cc:** Wiseman, Sara

Subject: FW: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

I will need the attached file for the period ending December 31, 2010 by February 1, 2010.

Thanks, Doug

From: Crescente, Angela

Sent: Friday, July 16, 2010 9:35 AM

To: Leichty, Doug

Subject: ARO Rollforward LGE KU Balance Ended Dec 09 for auditors.xls

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**Attachment to Response to** 

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## Attachment to Response to KU AG-1 Question No. 201 Page 1974 of 2028 Charnas

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Ending Balance Decositth Quarter	9,350,359,67	(4,950,311,14)	246,770,15	2,386,400,00	(34,305,307,69)	29,970,259,12	(4,142,125,13)	2,108,194,89	1,753,724,53	299,744,95	(2,100,194,69)	(299,744,95) 30(	3,997,18	(565,767,33)	(0.60)
January Activity ARO Accretion ARO Depreciation		(24,858,80)	7.1		(180,473.35)	180,473,35 24,858,86		180,473,35		24,858.86	(180,473,35)	(24,868,60)			
ARO RWIP Accus COR Sellament Articles		1,124,19	, , , , , , , , , , , , , , , , , , ,		14 800.24		(19,909,20)		19,909,20		1 1		, , 646.27		
Ending Balance Junto	9,390,183,09	(4,979,993,72)	231,833,91	2,388,400,00	(34,530,844,78)	30,160,754,89	(4,162,034,33)	160,473,35	1,773,633,73	24,858.86	(180,477,35)	(24,858,68)		(231,933,91)	(0.60)
February Activity ARO Acceptor ARO Depreciation		(24,744.98)			(181,352,65)	181,352,55		181,352,55	, , 50	24,744,90	(181,352.55)	(24,744,90)			
Status COX Ending Balance Feb 10	9,350,183,09	(5,004,738,19)	231,033,91	2,388,400,00	(34,712,297,31)	30,366,652.40	(4,181,943,53)	361,825,80	1,783,542,93	49,603.62	(361,525,90)	(49,603,62)		(231,933,91)	(09'0)
March Activity ARO Acarotion ARO Deprociation Acaro Con Resident Stations Endling Stations Martities Outston	8.350.183.09	(24,744,85)	231 833.84	2.388.400.00	(182,308,62)	162,306,62 24,744,85 30,573,805,87	(19,109,20)	192,300,02	18,808.20	24,744,95	(162,308.62)	(24,744,95)		231 623 613	, , , <u>,                              </u>
Total Activity 1st Quarter		(74,348,57)	(14,836.24)		(529,200,28)	603,644,85	(59,727.60)	544,137,62	90,727,00	74,348.67	(544,132,52)		14,636,24		(00'0)
April Activity ARO Accretion ARO Depreciation ARO RWIP Accus RWIP Ending Balance Aprile	6,350,33,84	(24,744,80)	B,088.40	2,388,400,00	(183,285,83)	193,265,83 24,744,09 - 30,781,014,70	(19.909.20)	183,205,83	19.809.20	24,744.30	(183,205,83)	(24,744,90)		(8,088.80)	. , ,0)
May Activity ARO Accretion ARO Reyrith ARO Reyrith ACO Reyrith Accretion Ending Balance May10	9,339,183,08	(24,744,50)	36.26 240,057.77	00.006,885,5	(184,230.08)	184,230,08 24,744,30	(18.890.20) (4,241.671.13)	184,230,08	19.999.20 18.89.270.50	24,744.30	(184,230,08) - - (911,828,43)	(24,744.00)		(35.26)	1 • • • (6)(6)
June Activity ARO Accedion ARO Depreciation ARO Royale AGO RAVIE Accuse CDR Ending Balance Jun102nd Querrer	9300,183,00	(24,744,05) (5,109,777,07)	240,087,77	2,389,400,00	(185,199.38) 	185,109,38 24,744,85 31,200,834,08	(19,009,20)	185,199,38	19.809.20 1.873.179.73	24,744.95	(185,180,36)	(24,744,05)	1 , , ,	(7.40,067.77)	, , , , , , , , , , , , , , , , , , ,
Total Aetivity 2nd Quarter		(74,234,84)	5,123,86		(352,805,27)	628,030,11	(69,727,60)	552,595,27	09,727,66	74,234,84	(552,695,27)	(74,234,84)	-	(8,123,86)	0.00
July Activity ARO Accretion ARO Demotation ARO RIVIP ARO RIVIP Accru COR Ending Balance Jul 0	0,350,163,09	(24,744,97)	240,057,77	3,389,400,00	(180,172,78) - - (85,633,472,98)	186,173,78 24,745,07 - 31,441,752,83	(19.393.20) (19.393.20)	188,173,78	19,895,088,80	24,744.87	(188,173,78) (1,283,001,37)	(24,744.97)		(7.40,057.77)	(09'0)
August Activity ARO Accelon ARO Deprediction ARO With Accelor COR		(24,744,03)	240,057,77	2,388,400,00	(187,153,38) - - (35,820,828,34)	187,153.36 24,744.03 - 31,623,651,12	(19,809,70)	187,153.36 - 1,470,154.03	19.808.20	24,744.00	(187,150,36)	(24,744,93)		(740,097,77)	(09'0)
Septembor Activity ARO Acretion ARO Sequenciation ARO Sequenciation ARO Sequenciation ARO Sequence ARO RIVINE Accuse CORE Ending Splannes Septifized Querter	22,321,617,53 (12,640,00) 31,699,280,67	(874,858,02) (874,681,84) 9,210,68	240,967,77	2,388,400.00	(188,138.12) (23,553,960,08) 215,307.79	188,138.12 24,117,91,27 (211,736,38) - 33,739,491,18	(19.900.18) (4.327.1307.01)	1,232,042,55	19,808,18	24,559,02 874,461,84 3,029,44 1,109,723,64	(1232,042,59) (1,232,042,59)	(24.550.02) (379,748.72) (3,029.44) (1,189,010,40)		(240,087,77)	, , oo, oo, oo, oo, oo, oo, oo
Total Activity 3rd Quarter	22,309,077,53	(02'008'888)	*	1	(23,900,057,55)	2,535,667,10	(60,777,54)	1,703,507.81	59,727,58	952,140,20	(1,793,507,81)	(957,427,08)			90'0
Octobor Activity ARO Accretion ARO Depreciation		(57,535,43)	.,	• 1	(182,146.50)	162,146.50 57,535,43	• •	162,146,50		57,535,43	(162,148,50)	(57,535,43)		• •	

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#### Attachment to Response to KU AG-1 Question No. 201 Page 1976 of 2028 Charnas

## Clark, Ed

From:

Sent:

To:

Subject:

Daly, Karen Monday, January 10, 2011 3:28 PM Crescente, Angela ARO Rollforward LGE KU Balance Ended Dec 10 for auditors.xls



ARO Rollforward LGE KU Balanc...

Attachment to Res	nonse to	KUA	7-1 Ou	estin	n N	o 201
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Louisville Gas end Electric Company ARO Rollforward Schedule - 2010

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- (2416, 3416, 79) (2,800, 246, 78	(295,460.141)	(434, 622, R3)	295,490,48	659,616,78	434,622.63	(3,176,424,50)	8,830,111,27	(52.656,788,61)	2,664,014,48	2,805,548,70	(29h,440,88)	48,107,138,54
(66,469.99)	٠,		.,	85,242,7		0.747.880	, ,	٠.,	. ,	55,409.50	.,	,
.,	(140,783.64)		(184,034,73)	• •	, ,		(40,679,322)				46,070,32	 
	(245,107,51)		246,167,51			•	245,167.51			•	(245,197,51)	
•		(217,727,10)	,	•	217,727,110		4 01,727,712	A (01.727,713)	٠	•	٠	•
77,076,386,79 (2,847,076,77	(103,844,46)	(274,795,73)	103,844,46	525,000,250	216,796,73	(5,107,076,94)	B,425,095,915	(52,433,051,61)	2,847,078,77 2,881,914,68	2,847,078,77	(94,372,69)	46,107,138,64
(daystrag)	• •	. ,	, .	2741.90		77.741.99)				103,211,38		
,		•	•	•	•		6,963,672,13		•		145,455,41	(6,109,127.64)
,	090,164,94	2,340,582.30	(ABA) (ABA)	1	(2,849,882.50)	•	,		•	•		•
Tobac Johan Cesh	407426 -407427 108	1500	403211742,403311	40300	40105-41157	254014 - 254016	182326 - 182327	230022,23,26,27	108001	navan.	1002074226,106326	101207,101225,101325
					The state of the s		STATE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	The state of the state of the state of				

(0.61)

C)Learn-HOUTTAA-1997 anh Locativing reactiving event imporary internat Pleas Consent Dudookivit TOTOZIAPO Railionward LOE KU Balance Dudod Dee 16 for auditon (Z).x6 / LOE 2016 Dee - CAAP

# Attachment to Response to KU AG-1 Question No. 201 Page 1979 of 2028 Charnas

60.0	(09°0)	(60°E) (10°E)	(090)	1,60) 1,51) (3,60)	(35,20) - (35,70) (0.60)		1 14	,	000	, , , , , , , , , , , , , , , , , , , ,
COR Cash Parent 1980cc Suffernent (553.707)	14,036,24	2001/200	(351,038	(8,088.60)	77,730,0450	DA0,087.77	(36)(36)	(240,067)	(2/40/05)	(os occusi)
240.422 Non-Parent 77422 Non-Parent 77425 (Obsert 760,744,85) 350,867,18	(24, 829,09)	(24,744,56)	(24,744.05) (74,340,57) (74,340,57)	(24,744,68)	Q4,744.90)	(24,744,65) (148,357,41)	(24,744,37) (175,328,38)	(24,744,63)	(870) 746,720 (870) 746,720 (5,629,44) 1,109,010,409	(57,535,43)
Aoor Regulation Cr. Dept R 407401 - 407402 40740 407405 47405 (2,100,194,00)	(100,472,265)	(181,082,56)	(182,300,82) (184,137,52) (584,137,52)	(185,285,83)	(184,230,58) - - (811,828,43)	(165,189.36) (1,099,822,79)	(180,172,78)	(187,150,30)	(1881,198.12) (1,232,042,53) (1,705,047,03)	(162,146,50)
Dopretialion Expense A 403111-403115 299,744,90	24,856.68	24,744,96	24,744,95 74,348,57 74,346,57	24,744,00	24,744,00 123,838.46	24,744,05 148,583,41 74,704,84	24,07	24,744,93	24,559.02 074,461.04 3,628,44 1,100,723,64 13,20,723,64	57,535,43 5,286,83
Deprediation Exp Frament 403xxx 1,759,724,63	19,800,20	16,200,20	19.009.22 1,813,432,13	18, 808, 20 18, 808, 20 1,853, 301, 33	05,009,00 62,075,658,1	10200.20	18.008.20 . 18.008.20 . 1800,088.50	18,800,20	10,009,48 1,400,407,31 59,777,69	
Actration Copense A11150-411151 411152 2108,194.68	180,473,35	181,352,55	182,306.62 544,132,52 644,132,52	183,285,83	184,230,08	185,199,30	186,173,78	187,153,38	1,733,607,81	102,148.50
Regulation 4 Liabilities 4 224014 - 234015 (4,142,129,13)	(10,400,20)	(10,008,20)	(19.909.20) (4.201.852.73) (56.727.00)	(4,221,751,97)	(18,809,20) (4,241,671,73)	(19,890,20) (4,281,580,30)	(10,000,20) (4,261,480,53)	(10,009,20) (4,301,306,70)	(40.809.18)	* 1 · • · · · · · · · · · · · · · · · · ·
Ropuleiory Assets 182373-182318 182328 20,070,298-12	188,473,355 A 24,558,60 - (14,536,29, E 30,195,754,59	181,352,55 A 24,744,96 30,366,862,40	102,300,02 A 24,744,05 30,573,905,97 000,044,85	163,265,83 A 24,744,99 30,781,814,79	144,230,05 A 24,744,90 - 30,890,849,77	185,100,36 A 24,744,05 31,200,534,08 626,030,11	189,173,78 A 24,744,97 31,411,722,83	167,153.30 A 24,744.03 31,020,031.12	185,135,12 A 24,556,02 2,111,791,27 B (211,791,27 B (211,791,491,16 B (211,791,491,10 B (211,791,491,10 B (211,791,491,10 B (211,791,491,10 B (211,791,491,10 B (211,791,491,10 B (211,791,10 B (211,7	102,146,50 A 57,505,43 554,073,69 E
ARO Liabililias 230012,13,15 23002,23,25 (34,305,597,09)	(180,473,35) A 14,330,24 E (34,330,544,70)	(181,352,55) A (181,352,553)	(182,308,62) A (34,884,903,53)	(163,263.83) A	(164,230,08) A	(185,190,30) A (05,447,290,20)	(180,173,78) A	(107,153,36) A	(186,136,12) A (22,553,860,00) D 215,587,79 D (10,347,316,719)	(102,140.50) A (2,708.77)
COR Parem 10sxxx Implementation 2;am,400,00	2,396,400,00	2,368,400,00	2,388,400,00	2,385,400,00	2,358,400,00	2,388,400,00	2,386,400,00	2,348,400.00	2,389,400,00	, , , , , ,
VIP-ARC-Legal 108799 248,770,15	(14.830.24) 231,938.91	. 231,938.91	231,933,0T	8,080,ao	35.26	240,057,77 8 403 88	740,097,77	240,087.77	240,047,777	18,326.50
Accum Depred Rt 0e107.4.108126 (4,856,311,14)	(24,558.00)	(24,744,90)	(3,020,483,13) (4,340,57)	(24,744,00)	(24,744,50)	(24,744,95)	(24,744,97)	(24,744,00) (6,153,207,67)	(24,556,02) (074,461,84) 9,216,86 (0,043,016,17)	(97,535,43) (5,206,88) 10,544,18
MRO Assails	(170,68) 0,2850,185,09	9,019,167,09	0),850,753,00	0,355,183,00	9,359,185,00	9,350,133,00	00'881'0'8£'0	50'ESP'0\$K'6	22,221,617.83 (12,440,00) (12,440,00) (13,693,700,00)	77.807.2 77.807.2 (38.57.5,808)
Ending Dalance Decoû/4th Quarter	January Activity ARO Acerdian ARO Especiation ARO Especiation ARO ENVIP Activity Cativity Cativity Cativity Cativity Cativity	Pebruary Activity ARO Accretion ARO Deproximon Accrus COR Ending Datance Febro	March Activity ARO Accordion ARO Depredation ARO Depredation ARO Depredation Common Common Common Total Activity 1st Quarter	April Activity ARO Accordion ARO Despression ARO Physics Accord COR Ending Batance April	May Activity ARO Accoration ARO Estreciation ARO Estreciation ARORIGORY ARORIGORY Ending Datance May 10	June Activity ARD Accountion ARD Accountion ARD Rivin Acturo COR Acturo COR Acturo Barrior Acturo Barrior Acturo Barrior Acturo	July Artivity July Artivity July Artivity ARO Depreciation ARO Revige Accrete COR Ending Dalance Julio	August Artivity ARO Accrution ARO Depredation ARO Payin ARO HWIP Accrus COR Ending Balance Aug10	Saphimber Activity ARO Approalion ARO Seprendion AR	October Activity ARO Assertion ARO Descreation ARO Revealuation ARO Revision ARO Revision ARO Revision ARO Revision ARO Revision

	ARD Assets 101107 & 101125	Adoum Deprec RWIP ARO Logal 10e107 & 108125 108799	WiP-APO Legal 108799	COR Parent 108xxx	ARO Limbilities 20012, 13,15 20022, 23,25	Regulatory Assets 162317 - 162318 162326	Regulatory A Elab  kles 254014-254015	Accretion Expense Dupreduitor Exp. 41150 - 41161 Parent 41155 400xxx	Depreciation Exp. Parent 402xxx	Depreciation Expense Acce Regulatory Or Dept Regulatory or COR 403111-403115 407-501-5420 407-23 None-Breat 407-401 407-401	oor Regulatory Cr D 107401 - 407402 407405	epr Regulatory Cr 107421 - 407422 No 407424	COR COR Di-Parani Paront 108xxx	R Cush	
Ending Balance Octf0	31,090,451,54	(6,006,298,32)	259,364,27	2,366,400,00		34,511,058,89		3,052,482,10	1,952,816.51	1,163,545.92	(0,052,482,10)	(1,163,545,97)		- (759,384,27)	(00'0)
November Activity															
ARO Accretion	,	•	,		(222,740,05) A	222,740,95 A		222,740,95			(222,740,95)		,		
ARO Depreciation		(244,908,80)	•	•	ı	244,908,80		•		244,908,80		(244,006,50)		,	•
ARO Purchase Accounting	22,438,432.03	6,095,298,32	•	•	5,977,328.45 C	(94,511,056,80) C	•				•				000
1/3 Reset for Acquisition	•				,			(3,052,462.10)	•	C. 363,545,029	3,062,482,10	1,163,545,92		•	00'0
ARO Reclass	(617,319.37)	2,320,78	•	•	ы •	614,908.82 E	•		•	•	•	•	•		•
ARO RWIP			(D) Dec day	• 1	•		, AO 000 AM		,000.00	•	•				
Podine Ratence Novio	52 647 584 20	120 ARR 050	77 770 042	2,388,400,00	(83,757,824,52)	1 OR2 64R 37	/4.361 126.30	222.740.06	1 977 775 7	244 908 80	130 047 0797	ANA SOB JOY		78 70 M	58.00
	Control of the Contro						A CONTRACTOR OF THE PARTY OF TH		100	000000	(00/04/200)	Accidentation (		( VCD Ob)	(00:0)
December Activity															
ARO Aggretion	•		•	•	(223,081,50) A	223,681.89 A	•	223,661,80			(223,681,89)				•
ARO Depredation		(245,293,00)		•		245,293,00	•	•		245,293.00		(245,293.00)			
ARO Recluss	- Table	774.50	•	,	•	(774.50)	•			(10'580'0)		3,005,31	,		
ARD RWIP			47,203,66	•							•	•		(47,203,00)	
Addrie COR		,		,	*	-	(18,409,20)		19.900.20	•	,		,	-	
Ending Balance Sec10	52,917,564,20	(487,108.49)	267,201,46	2,388,400,00	(63,981,306,41)	1,550,846,70	(4,341,035,51)	446,472,B4	1,992,634,91	487, 106, 49	(440,427.84)	(487,106,40)	-	(287,261,40)	(00'0)
2 (X) * Total ARO Accretion - other nonceast activity (I) * Total ARO Revolution - other nonceast activity (I) * Total ARO Petrol Act of viber nonceasts activity (I) * Total ARO Settlements - other nonceasts activity (I) * Total ARO Rectinisitation - other nonceast activity (I) * Total ARO Rectinisitation - other nonceast activity	<b>a 2</b>	Rag Aaset 2,286,892,39 1,282,042,86 -24,511,066,80 -250,204,03 1,109,872,31	ARC Llab -2,206,862,30 -23,653,900,08 5,077,328,45 215,367,78 0,00	20,500.20 253,500.00 977,230,45 223,507.0 (Two sections spilt on CF statement)	on CF statement)					Ne(amountanos soloum dopr and reg asset.	opr and rog assot.				

Attachment to Response to KU AG-1 Question No. 201 Page 1981 of 2028 Charnas

## Clark, Ed

From:

Daly, Karen

Sent:

Tuesday, January 11, 2011 10:11 AM

To:

Fackler, Andrea

Cc:

Crescente, Angela; Wacker, Diana

Subject:

ARO Roll-up with tie-outs for CF in plant report

Attached is the file we used for the plant report CF on the ARO's.



ARO Rollforward LGE KU Balanc...

If you have any questions, please let us know.

Karen L. Daly

Accounting Analyst III Property Accounting (502) 627-4279

## Attachment to Response to KU AG-1 Question No. 201 Page 1982 of 2028 Charnas

Cinding Calance Decopits Quarter	APO Visina 100 x control Copyrige (100% 2010) 2010 2010 2010 2010 2010 2010 201	Accum Depres 108107 & 104125 (4,055,311,14)	WIP-ARO Legal 104799 249,770,15	COR Parent 10 Boox 10 pornenialion 2 388,400,00	ARO Unblinies 230012,13,15 23002,23,29,29 (34,365,307,89)	Regulatory Assets 1820/7-182316 1820/5 29.970,259.12	Regulatory A. Liabilities 4 254014254015 (4,147,726.13)	Accretion Expense De 411150 - 411151 4111153 2.106,194.08	Deprectation Cop Parent 44 403ccc 1,750,724.50	Depreciation Expense Acc 403111-403115 40 200,744.85	Acc Regulatory Cr Dept 407401 - 407402 - 407 407405 - (7.100.194.69)	A07421 - 407422 Not-Paren 407421 - 407422 Not-Paren 407425 105xoc (709 744, 95) 300,89771	COR Cash  If Parent  100cc  Cash  Settlement  (003,707,3	(00'0)
(176.58)		(24,858.08) 178.58 (4,970,093,22)	(14,550,24)	2,508,400,00	(180,472,35) A	180,473,335 A 24,558,00 - (14,530,24), F. 30,140,734,40	(10,000,20)	180,475,38	18,800.20 1,773,619,73	24,858,00	(180,473,25) - - - - - - - - - - - - - - - - - - -	(24,884,00)	14,896,24	
- - 8,350,163,00		(5,004,739,18)	231,833,91	2,388,400,00	(181,362,59) A	181,352.55 A 24,744.90 30,388,832.40	(19,900,79)	181,352.55	18.898.20 1,789,542.33	24,744.98	(181,352,55)	(24,744,90)		(09:0)
60 WBF 080 6		(0,029,483.13) (0,029,483.13)	234,883,01	2,768,400,60	(182,300,82) A (14,884,805,80) (579,298,20)	102,300,02 A 24,744,05 30,573,993,87 603,644,86	(4.201.867.73)	182,308,82 544,132,62 544,132,62	18,409,20 1,613,492,13 59,727,60	24,744,85 74,348,57 74,348,57	(102,200,62) (544,132,52) (544,132,12)	(24,744,95) (74,348,57) (74,346,57)	(731,673.81	(6.60) (6.00)
9,350,153,09		(24,744,50)	8,088,00	2,388,400,00	(163,205,63) A	183,286,83 A 24,744,89 	(4,221,781,781)	185,265,83 	10.000.20 10.000.20 1,103.361.33	24,744,99	(183,285,73) - - (727,388,35)	(24,744,59)	(03,850,95) - (09,850,95)	
50'091'098'8	) 1 1 10	(24,744.90)	35.26	2,368,400,00	(184,230,00) A	184,230,08 A 24,744,80	(12,002.20)	164,230,00	- - 18,809,20 1,853,270,58	24,744,00 123,604,40	(184,230.08) - (911,828,43)	(24,744,00)	(36.26) (36.26)	(00.00)
00.051.03.09	80 (5)	(24,744,89)  (0,405,777,937)	240,067,77 8,123,49	2,388,400,00	(165,180,36) A (05,447,200,20)	185,190,38 A 24,744,95 31,200,854,08	(18.809.20) (4.701.690.33)	185,100.38 1,006,427.70 1,006,427.70	19.800.20 1,075.770.23	24,744,95 348,983,47 74,234,84	(185,180,36) - (1,086,727,79) (532,885,27)	(34,744,88)		(0°00)
9,300,483,09	, , , , , , , , , , , , , , , , , , ,	(24,744,97)	240,057,777	2,388,400,00	(196,173,78) A (35,633,472,98)	188,173,78 A 24,744,87	(10,809.20) (4,201,409.65)	186,173,78	18.809.20 1.809.20	24,744,07	(1263,001,57)	(24,744,07)	(LIXA) OF A	(0,00)
90,831,038,0	, , , , , , , , , , , , , , , , , , ,	(5,765,207,67)	240,057,77	2,388,400,00	(187,103,30) A	167,153.36 A 24,744.93	(18.202.20)	187,153,38	- 18.806.20 1,812,908.13	24,744,83 798,075,31	(187,153.36) - (1,470,154,79)	(24,744.93)		(000)
22,321,917,53 (12,840,00) (12,840,00) (13,858,280,02	17,539 10,000) 10,002	(24,559,02) (274,401,60) (274,401,60) (3,041,018,17) (3,041,018,17)	240,057,77	2,388,400,00	(104,104,12) A (21,545,000,00) D 215,007,70 D 215,007,70 D (96,547,500,70)	100,130,12 A 24,550,02 24,11,790,39 D (711,790,39) D (712,04,07) C (715,04,07,16	(19.000,18) (4.321,307,91) (6.327,308)	1232,042,86 1,232,042,86 2,800,338,60	19,000,18 1,032,007,31 99,727,58	24,558,02 874,401,04 3,039,44 1,100,773,61	(14202,042,59) (1,202,042,59) - - (2,660,335,60)	(0.4,560,02) (0.70,748,72) (0,520,44) (1,100,010,40) (1,100,010,40)	7,740,057,	
2,706,77 (065,617.85)	72.85)	(57,535,43) (5,286,88) (10,544,10	19,326,50		(102,140,50) A (2,706,77)	102,146,50 A 57,536,43 E 564,073,60 E	(19,906,20)	102,140,50	05.008.01	57,535,43 5,226,66	(192,149,50)	(57,535,43)	(pripagias)	

	ARC Assets 101107 & 101125	Acoum Depres RWIP-44O Legal 105107 & 109125 105709	(WIP-ARO Legal 106799	COR Parent 108xxx	ARO Libbilities 230012,13,15 230022,23,25	Regulatory Assets 182317 = 162316 182325		Accretion Expense Depreciation Exp 41150 - 411151 Perent 411155 403cox	sprediston Cxp Parent 403xxx	Depreciation Expanse Acx Regulatory C: Dept Regulatory C: 403111-403115 407401 - 407402 407427 - 407422 407405 407405	Dor Reguliniony Cr Di 107401 - 407402 - 4 407405	Deprifequatory Cr 407421 - 407422 No 407425	COR COR on-Parent Parent 108sec 108sec	on Cash and mo	
Ending Balance Octf0	31,005,451,54	(6,085,298,32)	250 384.27	2,365,400,00	(69,512,212,02)	34,511,056,80	(4,341,217,11)	3,052,482,10	1,952,816,61	1,163,545,92	(3,092,462,10)	(1,163,945,92)		- (250,364,27	(0:00)
November Activity								1							
AXO Acception					W (co/ou/555)	244 908 80		CO. 100.00		244 DAR 80	(540.95)	. C244 OBR RD			. ,
ARG Purchase Accounting	22,438,432.03	9,005,200.32	•		5,877,328.45 C	(34,511,096,50) C					. 1	(manager)			0,00
1/B Reset for Aequistion			•	•	•	•		(3,052,462.10)		(1,103,645,92)	3,052,482,10	1,163,545,02			00'0
ARO Reclass	(617,319.37)	2,320,75				614,998,62 II		,		•					•
AKO KWIP	• •	, ,	(10,326,50)			. ,	(19.909.20)		19,000.20	, ,				19.328.60	٠,
Ending Batance Novro	52,917,564,20	(242,348,03)	240,067,77	2,386,400,00	(\$3,787,924,83)	1,082,648,37	(4,361,126,31)	222,740,95	1 972,725,71	244,908,80	(222,740,95)	(244,905.80)	÷	- (240,057,77	(G:80)
December Activity															l
ARG Agantion	•		•		(223,081,89) A	223,691,89 A		223,681,89		•	(223,861,89)			,	
ARO Depredation		(245,293.00)	1			245,293.00				246,295,00		(245,203,00)		•	•
ARO Recinus		774.56		•		(774.50)				(1,085,31)	•	3,005,31	•	,	•
ARO RWIP	•	•	47,203,68	•		•	. 000 000		. 000 00	,				- (47,203,60)	
Ending Balance Decro	52,017,564,70	(487, 106, 49)	287, 261, 46	2,388,400.00	(53,061,306,41)	1,550,846,70	(4,381,035.51)	448,422,84	1,992,834,01	457,106,49	(440,422.84)	(457, 105.49)		- (287,261,46	(0.00)
1 (X) a "Stal ASO Accretion - other rentath activity 1 (II) a "Total ASO Revalation" - state rentation activity 1 (II) a "Total ASO Perm's Act all a clear nentation returns 1 (I) a "Total ASO Settlements - other nentation activity 1 (I) a "Total ASO Reclassification - other nentation activity	All A	Reg Asset 2,200,802,39 1,202,042,65 -24,511,056,80 -230,204,03 1,160,872,31	ARO Llab -2,266,982,39 -23,853,990,08 5,977,326,45 215,397,70 (	20, 502.30 20, 502.30 25, 500.00 22, 500.00 22, 500.70 (Two oections spill on CF extrement) 22, 500.00	) CF statement)					Net umount, affects actoim depr and rog cause,	opr and rog asset.				·

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February Activity ARO Accretion ARO Depreciation ARO Depreciation ARO Expression ARO Expression Accretic COR Ending Ediance Feb10	00 Hep? (CV, V)	(14,636,77)	1,470,84 1,480,848,12 2,8	(165,386,42) 2,881,814,68 (03,373,570,17)	14,630,77 14,630,77 29,989,642,36	(0.090,01)	195,356,02	9.099.01 477.716.24	14,630,77	(105,280.62)	(14,830,77)	7 , 1 , 4	(1,470,34) + (21,610,201,70) (1,610,440)	
March Activity ARO Activition ARO Depression ARO ROYP Activity OR ROYP Ending Balance Mar10/1st Quartor Total Activity 1st Quartor	00 ent 555 %	(14,030,74) - (3,132,202,19) (43,819,27)	37,639,44 1,731,487,89, 2,6 38,109,20	(160,213,02) 2,881,614,686 (23,839,763,09) (489,163,49)	A 168213.02 14,839.74 30,139,498.71 840,059.72	(0,008,01) (0,100,492,02)	100,213,82 	0,000,00 10,000,00 17,204,00	14,630.74	(100,212,002) (20,(211,004)	(14,609,74) (43,919,27)		(37,638,44)	(000)
April Activity ARO, Auteration ARO Captresionen ARO Captresionen ARO RATIO Actua COR Ending Dalance April0	90 dear 255 9	(14,038,75) 	44,377.72 1,779,R43,278	(167,046,35)	A 167,045,35 14,659,75	0.008.01)	167,646,36 6,200,203	0.5.00.00 10.000.00 10.000.000.000	14,639.78 59,569,02	(06, 405, 6149)	(14,636,75)	, , , ,	(27,776,44) (27,706,470) (07,006,007)	Page Chari
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July Activity ARO Agentation ARO Depreciation ARO Paying Aboute COF Ending Delance Jul70	00 (day 758) 0	(14,030,78)		(160,264,07) A 2,881,91,4,88 (34,273,006,29)	A 100,004.87 14,039,70	A	169,584,87		14,030,78 	(150,564,07)	(14,630,70)		(25) (25) (25) (25) (25) (25) (25) (25)	se to KU
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Attachment to Response to KU AG-1 Question No. 201 Page 1986 of 2028 Charnas

I would say 50% of each, especially for PR chimney, as the asbestos coating will extremely complicate the work.

From: Mooney, Mike (BOC 3)

Sent: Thursday, December 22, 2011 10:14 AM

To: Jones, Greg

Subject: FW: Paddy's and Canal 108 Estimate

Any idea about the amounts they want below?

--Mike

From: Crescente, Angela

Sent: Thursday, December 22, 2011 10:00 AM

To: Mooney, Mike (BOC 3)

Subject: Paddy's and Canal 108 Estimate

Mike,

Paddy's (132874) has \$2,500,000 budget to 108901 for 2012 and Canal (132875) has \$1,525,000 budgeted for 2012. Is any of this related to the removal of asbestos? If so, please provide me an estimate of how much is asbestos related versus normal removal. In order to complete the ARO footnote for year-end, I need this information no later than January 3<sup>rd</sup>.

Thanks, Angela

Attachment to Response to KU AG-1 Question No. 201 Page 1987 of 2028 Charnas

# Crescente, Angela

From:

Mooney, Mike (BOC 3)

Sent:

Thursday, December 22, 2011 10:42 AM

To:

Crescente, Angela

Subject:

FW: Paddy's and Canal 108 Estimate

Angela,

According to the engineer below, 50% of Paddy's (\$1.25M) and 50% of Canal (\$762k) will be for asbestos removal.

If you need anything else, just let me know.

--Mike

From: Jones, Greg

Sent: Thursday, December 22, 2011 10:32 AM

To: Mooney, Mike (BOC 3)

Subject: RE: Paddy's and Canal 108 Estimate

I would say 50% of each, especially for PR chimney, as the asbestos coating will extremely complicate the work.

From: Mooney, Mike (BOC 3)

Sent: Thursday, December 22, 2011 10:14 AM

**To:** Jones, Greg

Subject: FW: Paddy's and Canal 108 Estimate

Any idea about the amounts they want below?

--Mike

From: Crescente, Angela

Sent: Thursday, December 22, 2011 10:00 AM

To: Mooney, Mike (BOC 3)

Subject: Paddy's and Canal 108 Estimate

Mike,

Paddy's (132874) has \$2,500,000 budget to 108901 for 2012 and Canal (132875) has \$1,525,000 budgeted for 2012. Is any of this related to the removal of asbestos? If so, please provide me an estimate of how much is asbestos related versus normal removal. In order to complete the ARO footnote for year-end, I need this information no later than January 3<sup>rd</sup>.

Attachment to Response to KU AG-1 Question No. 201 Page 1988 of 2028 Charnas

# Crescente, Angela

From:

Mooney, Mike (BOC 3)

Sent:

Thursday, December 22, 2011 10:23 AM

To:

Crescente, Angela

Subject:

RE: Paddy's and Canal 108 Estimate

I will try to track down the engineer responsible for those projects and try to get an answer for you today.

--Mike

From: Crescente, Angela

Sent: Thursday, December 22, 2011 10:00 AM

To: Mooney, Mike (BOC 3)

Subject: Paddy's and Canal 108 Estimate

Mike,

Paddy's (132874) has \$2,500,000 budget to 108901 for 2012 and Canal (132875) has \$1,525,000 budgeted for 2012. Is any of this related to the removal of asbestos? If so, please provide me an estimate of how much is asbestos related versus normal removal. In order to complete the ARO footnote for year-end, I need this information no later than January 3<sup>rd</sup>.

Attachment to Response to KU AG-1 Question No. 201 Page 1989 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Thursday, December 22, 2011 10:00 AM

To:

Mooney, Mike (BOC 3)

Subject:

Paddy's and Canal 108 Estimate

Mike,

Paddy's (132874) has \$2,500,000 budget to 108901 for 2012 and Canal (132875) has \$1,525,000 budgeted for 2012. Is any of this related to the removal of asbestos? If so, please provide me an estimate of how much is asbestos related versus normal removal. In order to complete the ARO footnote for year-end, I need this information no later than January 3<sup>rd</sup>.

Attachment to Response to KU AG-1 Question No. 201 Page 1990 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Thursday, December 22, 2011 9:56 AM

To:

Raque, Gary

Subject:

Ohio Falls 108 Estimate

Gary,

There are two projects (127095 and 127202) that have money budgeted to 108901 (\$954,000 each) for 2012. Is any of this asbestos removal related? If so, would you be able to provide an estimate to me for how much is related to asbestos removal versus normal removal no later than January 4th, please? I need to know for the ARO footnote for year-end.

Attachment to Response to KU AG-1 Question No. 201 Page 1991 of 2028 Charnas

### Clark, Ed

From:

Christopher.Holland@ey.com

Sent:

Monday, October 10, 2011 10:57 AM

To: Subject: Crescente, Angela

Attachments:

Re: FW: ARO Settlement Testing
List of ARO settlements for 2011 - E&Y request xlsx; AIPs requested by E&Y.pdf; ARO Audit

Testing Screenshots - E&Y.docx

Thanks Angela

### Christopher J. Holland | Assurance

Ernst & Young LLP

400 West Market St Suite 2400, Louisville, KY 40202, United States of America

Office: (502) 585-1400 | Christopher.Holland@ey.com

Website: www.ey.com

Thank you for considering the environmental impact of printing emails.

From:

"Crescente, Angela" < Angela. Crescente@lge-ku.com>

To:

"christopher.holland@ey.com" <christopher.holland@ey.com>

Cc:

"Wiseman, Sara" <Sara.Wiseman@lge-ku.com>

Date:

10/10/2011 09:37 AM FW: ARO Settlement Testing

Subject:

Chris,

I have attached project screenshots per your request for the selected settlements. Please note, the ARO RWIP account is 108799 instead of 108901 as we discussed. I have also attached the AIPs per your request. However, PMR414 does not have an AIP as it is a blanket project that does not require AIPs.

Please feel free to contact me if you have any questions.

Thanks, Angela

From: Christopher.Holland@ey.com [mailto:Christopher.Holland@ey.com]

Sent: Friday, October 07, 2011 10:22 AM

To: Crescente, Angela

Subject: ARO Settlement Testing

Angela.

As an engagement team, we have decided to test the ARO controls in two different ways. The first way, we have the support we need and can independently test. The second way will be a sample from the known ARO settlements in the year. I have selected five settlements (see attached for selections highlighted in yellow). For these, we would like to see

Attachment to Response to KU AG-1 Question No. 201 Page 1992 of 2028

Charnas

the screen shot showing that the payments are set up in the right account but since the control also references the original AIP and the process of establishing the ARO, we are also going to want to see the original AIP for the 5 selections. Let me know if you have any difficulty gathering this support.

Thanks,

Chris



Christopher J. Holland | Assurance

Ernst & Young LLP

400 West Market St Suite 2400, Louisville, KY 40202, United States of America

Office: (502) 585-1400 | Christopher.Holland@ey.com

Website: www.ey.com

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Attachment to Response to KU AG-1 Question No. 201

Charnas
preferences through a separate process) at this e-mail address by forwarding this message to no-more-mail@ey.com. If you do so, the sender of this message will be notified promptly. Our principal postal address is 5 Times Square, New York, NY 10036. Thank you. Ernst & Young LLP

Project	Task	ARO				
112767	CP ARO2010	MC Landfill				
120578	CP RETIRE MAIN	GAS MAINS AND SERVICE ABANDONMENTS				
122452	CP ASBESTOS	PRESTON CITY GATE				
123187	CP AROTY3ASB2008	TY3 ASBESTOS				
124001	CP ASBESTOS	GR3 ASBESTOS				
124260	CP ASBESTOS	BR1 ASBESTOS				
124380	CP ARO09-4AH-R	CR4 ASBESTOS				
124380	CP ARO09-5BL-R	CR5 ASBESTOS				
124380	CP ARO09-6BL-R	CR6 ASBESTOS				
124798	CP ASBESTOS	MAGNOLIA 235120				
124798	CP ASBESTOS	MAGNOLIA 235300				
124798	CP ASBESTOS	MAGNOLIA 235600				
124802	CP ASBESTOS	MULDRAUGH 235120				
124802	CP ASBESTOS	MULDRAUGH 235300				
124802	CP ASBESTOS	MULDRAUGH 235600				
124831	CP PLUG WELL-CTR	Center GSF UGS (Wells)				
124831	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)				
124831	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)				
124842	CP ASBESTOS	PRESTON CITY GATE				
126057	CP ASBESTOS	BR2 ASBESTOS				
126160	CP ASBESTOS	TY3 ASBESTOS				
126421	CP PLUG WELL-CTR	Center GSF UGS (Wells)				
126421	CP PLUG WELL-DRI	Doe Run GSF UGS (Wells)				
126421	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)				
126421	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)				
126421	CP PLUG WELL-MUL	Muldraugh GSF UGS (Wells)				
127259	CP ASBESTOS	BR1 ASBESTOS				
127280	CP ARO ASBESTOS	MILL CREEK 2 ASB				
127297	CP ASBESTOS	BR2 ASBESTOS				
130720	CP ASBESTOS	MILL CREEK 1 ASB				
AROMC0241	CP 1755793	MC Landfill				
LSMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS				
PMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS				

Attachment to Response to KU AG-1 Question No. 201 Page 1995 of 2028 Charnas

	AUTHO	RIZATION F	OR INVEST			•		X Original
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LG&E Energy Service	s Co.	I X ILou	sville Gos a Siect		ار پ سیب		backy Utilities	Company
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4 Director (Non-iT >\$100): up to	\$300k; <u>IT &gt;\$5</u> 0k	up to \$100k)	Michael Kirl	kland	West	AL ANDE	7,	3/2/07
<ol> <li>OBU Budget Coordinator (14)</li> <li>Financial Planning (Non-)1 ar</li> </ol>	ATT >2300k; AUG	inhistowed	Deborah A.	DOMO		none was	P	7:409
projects; all Development Pro	posals) [14] or Inv	astroant (	1		11	1110	اميلا	dolo
Consulting Coordinator (Non-	T >\$1,0M; IT >\$5	00k; /\U	(). Huss	men	W	ris liQu /1	She	47/17
7. Vice-President (Non-IT>\$300)	k un to \$750k: f7>	3100k up	0. 17.00		.71	6 1 10/-	<del></del>	
to \$200k; Dovelopment up to	200%)	· · · · · · · · · · · · · · · · · · ·	Relph Bou	Cog_	.Xa	lat Dow	man,	3/4/04
<ol> <li>Senior Officer (Non-IT&gt;\$750); to \$500ig Dovelopment &gt;\$200</li> </ol>		ISONYAD	Pavi W. Ther	npson	41,0	E MY WASA	1026	) <i>3151</i> 09
9 CFO (NoAT >\$1,0M; IT >\$50 		>\$500k)	Bred Rhy		-	3/3/	LLA	3/9/09
10 CEO (Non-17 >\$1.0M up to €						A STATE OF THE PARTY OF THE PAR	X	11/1/10
€20.0M; Davelopment >\$500 11 E.On Board	( up to €25,0M [11	· <u>·</u>	Vie Staffe	HI	<b></b> -	<u> </u>		-VICDIVI
(Non-IT, )T, and Dovelopment	> €25.0M)	<u>, ,,, ,</u>		<u></u>				<u> </u>
12 Information Technology (17) 13 Utroctor of Operating Services	[18]		Yeny Ha Kathloon A.	SEV				
14 Property Accounting (Including			Bruco M. R	030	25/2	start of	2	37.77.79 37.74.01 (DI 19109)
			,		, -	V 1 /	F Moctiv	กระบบเทา (เบเมนายา

Attachment to Response to KU AG-1 Question No. 201 Page 1996 of 2028 Charnas

•				Pròject Ni	imber:	112767	
Accounting ( -Upon ratirems disposal of this -Does this proj -Will this project	ent of the new a sasset? ect involve a le		xist governin		Y X	и И И	X
Environment		Recovery (ECR) project?			۷ <del>۱ ×</del>	1 N	ı i
If yes, indicate	project type:	Air Water	Waste	Х	Noise	֓֞֞֞֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
- ,		Dilance plan number:  State ECR and other environmental issues		·	initial and Date		
is this an expension of the plant of the pla	rimental project ant facility?	(R&E) Gradit [21]: with the purpose of improving, enhancing, or addi er at 502-627-2796 in the Tax Department to determ	•		Y	] ห	х
ls this project (if yes, this If the answer to	l done for envir may qualify for all three quest	nt Tasks only [22]: onmental regulations or statutes (a)? the Poliution Control Exemption) tions below is yas, this may qualify for the New & E	xpanded ex	emption.	Y X	] ห	
• •	•	he Manufecturing Process (b)? • state for the first time (c)?			Y	и !	<u> </u>
les this project	considered an	upgrade of improvement (d)? oplicable (i.e., improved materials, increased capac	City, langer li	le, eta):	Υ	<b>ј</b> н	х
		investment materials	8				
Yask Number 50A	UOP# 5391	Vartical Closure - Misc. materials for vartical landfill closelying and concrete drainage ditches	seout Includin	g drálnaga	Quantity Lol	Total 4	Cost 67,330
70A	6391	Horizontal Expansion - Misc. materials for horizontal lar stone, drainage piping, concrete drainage ditches, liner	ndfill construct s and leachat	lon including e	Lot	446,417	
	•			Total		9	13,747
		retired equipment (or mater	RIALS)				
Task Number 10B	UOP#				den der	Vintogo Year	Qly
				100			
· '*		SALVAGE & TRANSFERRED EQUI	РМЕНТ				
Task Number	UOPII		Salyage Slock (rewind to swintown)	Salvage Junk (soid to 3rd party)	Salvage Equipment	Transf Egulpi	
		Total		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			

	AUTHO	RIZATION	OR INVEST			`		TX1 (	lenigh¢
			(/2	243	86	ワノ			Revised
EON U.S. Services Co.		X Loui	svile Gas & Elect				ucky Utililes	Company	
LG&E Energy Marketing	J	Wes	lern Kenlucky Ent	et <b>û</b> A		LG&	E Power inc.		
Olhers									
Name of Project: GR Asbesto	s Abstement 200	)9	<del></del>	******					
Dale Requested: 3/1/2009	Proj	oct Humber:	124380	Related P	ro]ect	Numbers			
Budgeled [1] Y X N		budgeted, list all	emate budget re	. Number(	)[[]:				
Expected Start Date [2]: 41/20	D9 Expo	cled in-service (	Date [2]: 12/3	1/2009	Exp	cted Completion	Da1e [2]:	12/31/100	9
AIP Prepared by: Tim Harder			Pho	19: 449-	8840				
Project Managere Steve Legie			: Phor	19; 449-	8644				
Product Code [3] Resp. Co	enter [4] Loc	ation#[6]	OBU Nan Regulated Go			Environm	ental CodelC	alegory (7	
<u></u>	******	SONS AND DETA	uled descript	ION OF PR	OJEO	ĭ			
Avingray is requested to continue the	a ellost begun in t	992 to minimize a	skejch na., ji oppli nd abolo knovm o	nd potential	emplo	yaa exposures to r	asbesios ihai	exists with	n the
Plant facilities. The abatement proje of known and potential employee ax									
maintenança la required.	, ,			,					
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						a . L	مين و د		
<u> </u>		Cost of	<del></del>	·		12/2 13/2	00 10	W -08	74
	Capital	Removal	Capital Cost	inhial O	816	Maintenance	OSM Cost	TOTA	NL
Company Labor	Investigions	Retirement	Subloia) (8)	Cost	1	Cost [9]	Subtotal	HVESTA	
Contract Lebor	77,536 65,000	120,000 5,000	107,536 70,000				•	19	7,636 0,000
Olher (Describe)			10,000						4,040
Less Salvago Local Engineering (Lc)	3,977	3,488	7,484						7,464
Subtotel - GAAP	146,513	128,488	276,000		•		<u>·</u>		6,000
Conit, in Ald on Constr. (CIAC) [15] Net Expenditures - GAAP	146,613	128,488	275,000				<del>:</del>	- 27	5,000
Capitalized Interest (if applicable) [12				<del></del>					
Net Exponditures - IFRS	148,613	128,488	276,000	<u> </u>		• • • • • •		27	6,000
Authorized by			CAPITAL COST	SURTOYAL ed Name	COL	UMN) [8]: Signaturo		Date	
Supervisor/Team Leader (Non-     Commercial Operations Manage		5k)			-(	CIN KIN		2.8	0.12
2 Commercial Operations Menag 3 Manager (Non-IT > \$25k up to \$ 4 Director (Non-IT > \$100k up to \$	100k; JY >\$25k us	to \$50k)	Dan Kren Stave Leg			Same Ser		3-5-	
4 Director (Non-IT >\$ 100k up to 1	100k; IT >\$50k u	n to \$100%)	Steve Tur		$\mathcal{Z}_{i}$	- 13		3-6-	09
<ol> <li>OBU Budget Coordinator [14]</li> <li>Financial Planning (Non-I) and</li> </ol>	17 > \$300k; pll unt	วบซีญย์โลนี	Deborah D	070	634	Mara Hite		3.16.0	7-
projects; all Davelopment Propo	osais) [15] or Inve	simep*							1
Committee Goordinator (Non-17 Development > \$500%) [15]	>>1'0W' (1 >\$20)	PK: 1	(	•					İ
<ol> <li>Vke-President (Non-11&gt;\$300k)</li> </ol>		100k vp							
to \$200x; Development up to \$7 8. Senior Officer (Non-17>\$750x u		00 k Up	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			······································			{
to \$500k; Dayalopment >\$200k	up to \$500k}								
9 CFO (Non-IT >\$ 1.0M; IT >\$ 500 [16]									
10 CEO (Non-IT >\$1,034 up to €25 €25,035; Development >\$500k up		· to							
11 E.On Board (Non-IT, IT, and Davelopment >									
12 Information Technology [17]									=
13 Director of Operating Services [	(b)					2-1-1	2		70
14 Property Accounting (including t	WAHAI FIBEYI		Unice Ro	30	-7.	- indept	-	3-23-	<u>07</u> }

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				Project N	nwper:	12438	0
disposal of the	wen erli la iner		exist governi	ពទ្ធ	Y		N X
if yes, indicate If yes, also pr	ironmental Cosi e project type: ovide ECR com	t Recovery (ECR) project?  Air Water  pliance plan number:	West	0	Y	<u> </u>	N X
Rosearch & Is this an expo process at a p	Experimental erimental projec elant facility?	I (R&E) Credit [21]: I with the purpose of improving, enhancing, or ad- er at 502-627-2796 in the Tax Department to dete	-		enhuts Y	] ,	1 <u> </u>
is this proje. (If yes, this If the answer!	ct done for envi s may qualify fo to all three ques	nt Tasks only [22]: ronmental regulations or statutos (a)? r the Pollution Control Exemption) silons bolow is yes, this may qualify for the New & the Manufacturing Process (b)?	Expanded ex	emplion.	Y X	и [	× X
is this project	ot considered ar	e state for the first time (c)? n upgrede or improvement (d)? pplicable (l.e., improved materials, increased cap	acity, longer l	ile, etc):	Y	N N	X X
		investment materia	LS				
Task Number IQA	UOP# Verious	Construction to verious press and UCPs with in Cane	Run Plant		Quantity Various	Tota	85,000
				Total	-		65,000
Task Number 10B	UOP# Various	RETIRED EQUIPMENT (OR MAT		Project Project	riginal ct Number 18142	Vintage Year	Qty Various
						·	,
Task Number	UOP#	SALVAGE & TRANSFERRED EQU	Salvage Slock (returned to alexerosm)	Salvage Junk (tots to 3rd party)	SaNago Equipment	Trans Equir	lerred oment
-17-							
		Total					

Effective 12/18/07

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# **AUTHORIZATION FOR INVESTMENT PROPOSAL - REVISION** LG&E and KU Services Co. N Louisville Gas and Electric Co. Kentucky Ulfikles Compa Name of Project: 2010 PLUG AND REPAIR WELLS Funding Project Type: Gas UG Stor NonDl Task Level Unitiz Project Number: 128421 Date Requested: Budgeled: Related Project Numbers: Il unbudgotod, list alternate budget ref. Number(s): 126421 \$143K, ROMV332 \$105K, MAN414 \$100K, 126423 \$82k Expected in Service Date: Expected Completion Date: Expected Start Date: 1/1/2010 12/1/2010 12/1/2010 Phone: 502/333-1885 AIP Propared by: Syndheimer, Glenn Project Manager: Sundhelmer, Glenn 502/333-1885 Phono: Asset Location: Magnolia Storage Field Environmental Code: Rosp, Contor: Product Code: 131 - GAS COMMON 004475-DIR. GAS CONTROL AND STORAGE REASONS AND DETAILED DESCRIPTION OF PROJECT 128421-2010 PLUG AND REPAIR WELLS WITH CORRODED CASINGS This project involves plugging and repairing gas storage wells like have either corroded casing, corroded acid lines, or defective valves. Wells with corroded casing for which relining is not viable will either be plugged, patched, or if defects are near the surface, repaired. Plugging and repairing wells is crucial for the safe and officient operation of LG&E's storage fields

Costs	Capital Investment	Cost of Removal Retirement	Capital Cost - Subtotal	Inital O&M Cost	Lifetime Maintenance Cost	O&M Cost Subtotal	TOTAL INVESTMENT
Company Labor	\$D.00	\$67,177.73	\$67,177,73	\$0.00	\$0.00	\$0.00	\$67,177.73
zCompany Labor	\$0.00	\$0.00	\$0.00.	\$0.00	\$0.00	\$0.00	\$0.00
Contract Labor	\$0.00	\$370,348.23	\$370,348.23	\$0.00	\$0.00	\$0.00	\$370,348.23
zContract Labor	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
thaterials	\$7,000.00	\$20,823.90	\$27,823.90	\$0.00	\$0.00	\$0.00	\$27,823.90
zhiatoriala	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Olhar	\$0.00	\$17,521,86	\$17,521.86	\$0.00	\$0.00	\$0.00	\$17,521.86
zOlher	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Local Engineering	\$0.00	\$37,128.28	\$37,128,28	\$0.00	\$0.00	\$0.00	\$37,128.28
zl.ocal Engineering	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subtotal - GAAP	\$7,000.00	\$513,000.00	\$520,000.00	\$0.00	\$0.00	\$0.00	\$520,000.00
Net Expenditules - GAAP	\$7,000.00	\$513,000.00	\$520,000.00	\$0.00	\$0.00	\$0.00	5520,000.00
Net Expenditures - IFRS	\$7,000.00	\$513,000.00	\$520,000.00	\$0.00	\$0.00	\$0.00	\$520,000.00
2010 Total	\$7,000.00	\$513,000.00	\$520,000.00	\$0.00	\$0.00	\$0.00	\$520,000.00

Approval Type: Non-IT Projects

Authorized by	Amount	Namo	Date Approved	Req'd
Supervisor	\$25,000.00			N
Manager	\$100,000.00	Skeggs, John	12/20/2010	Υ
Budget Coordinator	\$0,00	Porter, Janko	12/20/2010	Y
Diractor	\$300,000.00	Walker, Barry	12/21/2010	Y
Vico Prosident	\$760,000.00	Hulf, David for Malloy, John	12/21/2010	Ÿ
investment Committee Coordinator	\$0.00	Kuhl Megan	12/21/2010	Y
Financial Planning Director	\$0.00	Garrett, Christopher	12/21/2010	Y
Senior Officer	\$1,000,000.00			N
CFO	\$1,000,001.00			N
CEO	\$1,000,002.00			N
Property Accounting	\$0.00	Leonorts, Patricia	12/22/2010	Υ

INVESTMENT A	MATERIALS
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				,		
UOP#	I little a A a a a su a b Lat		l ^	M	1 /	
IVOR#	Utility Account Id		Quantity	Total Cost	1 1	
		I		1-10: 4001	1 1	
					<del></del>	
j l		I .	3	1	1	
1		l i	í		1 1	
			t .		1 3	

RETIRED EQUIPEMENT (OR MATERIALS)

UOP#	Utility Account Id		Ouentity	Vintage Year	Original Project Number
		VI			

### AIP QUESTIONS

Are there Related Project Numbers? Provide related project numbers or indicate 'N/A', n/a

is this on it rotated project?

IT project is any project that requires IT involvement or the purchase of hardware and software.

Purchase/Sale of Real Estate?

Is this a transaction related to the sale/purchase of land or buildings?

no

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Funded with money previously allocated to project 122897 within Generation pool  Expected Start Date: 11/18/2009 Expected in Service Date: 1/4/2010 Expected Completion Date: 1/1/2010  AIP Propared by: Cecil, Ray Phone: 502/933-8808  Project Manager: Cecil, Ray Phone: 502/933-8808	•			100	7000
Namo of Project: MC2 Sootblower Pipe Insulation   Funding Project Type: LGE Steam NonBink Excluding Land   Date Requested: 19/15/2009   Project Number: 127280   Budgeled: 40   Related Project Numbers:   If unbudgeted, list alternate budget rof. Number(s):   Funded with money previously allocated to project 122897 within Generation pool   Expected Start Date: 11/18/2009   Expected In Service Date: 1/4/2010   Expected Completion Date: 1/1/2010   AIP Propared by: Cecil, Ray   Phone: 502/933-6808   Project Manager: Cecil, Ray   Phone: 502/933-6808   Project Manager: Cecil, Ray   Phone: 502/933-6808   Resp. Center: 092401-GEN, MGR. MILL CREEK STATION   Product Code: N/A   Resp. Center: 092401-GEN, MGR. MILL CREEK STATION   Product Code: 111 - WHOLESALE GENERATION   REASONS AND DETAILED DESCRIPTION OF PROJECT   MC2 Sootblower Thermal Drain Piping Insulation    ARO	TT FONUS. Services Co			- 6, 104	COUDANY
Date Requested: 10/15/2009   Project Number: 127280   Budgeted: 40   Related Project Numbers:   If unbudgeted, that alternate budget ref. Number(s): Funded with money previously allocated to project 122897 within Generation pool			T		
Related Project Numbers:  N/A    If unbudgeted, list alternate budget ref. Number(s):   Funded with money previously allocated to project 122897 within   Generation pool    Expected Start Date: 11/18/2009   Expected in Service Date: 1/4/2010   Expected Completion Date: 1/1/2010   AIP Propared by: Cecil, Ray   Phone: 502/633-6808   Project Manager: Cecil, Ray   Phone: 502/633-6808   Project Manager: Cecil, Ray   Phone: 502/633-6808   Project Manager: Occil, Ray   Phone: 502/633-6808   Phone		<del></del>	<u> </u>	7	· · · · · · · · · · · · · · · · · · ·
AIP Propared by: Cecil, Ray  Phono: 502/933-6808  Project Manager: Cecil, Ray  Phono: 502/933-6808  Asset Location: Mill Greek Unit 2  Environmental Code: N/A  Resp. Center: 002401-GEN, MGR, MILL CREEK STATION  REASONS AND DETAILED DESCRIPTION OF PROJECT  MC2 Scotblower Thermal Orain Piping Insulation  ARO Accil 131200  Total 84  The insulation on the Mill Creek Unit #2 scotblower thermal drein piping at the main floor 8 mezzanine elevations contains asbesios, fine insulation is 36 years old and in a deteriorated state, which could possibly be releasing esbesios fibers into the atmosphere. There are reas where insulation has fallen off and the hot pipes are exposed, resulting in loss of officiency and creating a potential safety hezerd for persistions and metalclapace or majores. We need to escutive the proper permits to abate the damaged ACM and reform the thermal programment.	Related Project Numbers: N/A		if unbudgeted, list i Funded with money	alternate budget ref. Number(s):	
Project Manager: Cecil, Ray  Asset Location: Mill Greek Unit 2  Resp. Center: 002401-GEN, MGR. MILL CREEK STATION  REASONS AND DETAILED DESCRIPTION OF PROJECT  MC2 Sootblower Thermal Orain Piping Insulation  ARC Accid-181200  Tocid-084  The thermal insulation on the Mill Greek Unit #2 sootblower thermal drain piping at the main floor 8 mezzanine elevations contains asbestos, the insulation is 36 years old and in a deteriorated state, which could possibly be releasing esbestos fibers into the atmosphere. There are troas where insulation has fallen off and the hot pipes are exposed, resulting to loss of olficiency and creating a potential safety hezard for piperallional and methionance ornplayoses. We need to require the proper permits to about the damaged ACM and roturn the thermal	Expected Start Date: 11/18/2009	Expected in Service I	)ale: 1/4/2010	Expected Completter	Date: 1/1/2010
Asset Location: Mill Greek Unit 2  Resp. Center: 002401-GEN, MGR. MILL CREEK STATION  REASONS AND DETAILED DESCRIPTION OF PROJECT  MG2 Sociolower Thermal Orain Piping Insulation  ARC Accl-131200 Toxt-084  The insulation on the Mill Creek Unit #2 sociolower thermal drain piping at the main floor & mazzanine elevations contains asbesics, the insulation is 36 years old and in a datellorated state, which could possibly be releasing asbesics fibers into the almosphere. There are upperational and maintenance employees, We need to acquire the proper permits to abate the damaged ACM and refurn the thermal	AIP Propared by: Cecil, Ray			Phono: 502/933-8808	
Resp. Center: 002401-GEN, MGR. MILL CREEK STATION Product Code: 111 - WHOLESALE GENERATION  REASONS AND DETAILED DESCRIPTION OF PROJECT  MG2 Sociolower Thermal Ordin Piping Insulation  ARO Acclar 131200 Toxa-084  The insulation on the Mill Creek Unit #2 sociolower thermal drein piping at the main floor & mezzenine elevations contains asbesics, fine insulation is 36 years old and in a detailorated state, which could possibly be releasing asbesics fibers into the almosphere. There are present insulation has fallen off and the hot pipes are exposed, resulting to income on creating a potential safety hezard for poperational and metalconance or popologous. We need to acquire the proper permits to abate the damaged ACM and return the thermal	Project Manager: Cecil, Ray			Phone: 502/933-6808	
REASONS AND DETAILED DESCRIPTION OF PROJECT  ACC - 181200 Tox - 084  The thermal insulation on the Mill Greek Unit #2 social own thermal drain piping at the main floor & mezzanine elevations contains asbesios, the insulation is 36 years old and in a detailorated state, which could possibly be releasing asbesios fibers into the atmosphere. There are upperational and maintenance or polygons. We need to acquire the proper permits to abate the damaged ACM and return the thermal	Asset Location: Mill Creek Unit 2		Environ	mentel Code: N/A	
MG2 Sociolower Thermal Orain Piping Insulation  ARO Accident 31200 Tout - 0844  The thermal Insulation on the Mill Creek Unit #2 sociolower thermal drain piping at the main floor & mezzanine elevations contains asbesics, the insulation is 36 years old and in a deteriorated state, which could possibly be releasing asbesics fibers into the almosphere. There are received insulation has fallen off and the hot pipes are exposed, resulting to loss of efficiency and creating a potential safety heard for pagarational and maintenance or popologous. We need to acquire the proper parmits to abate the damaged ACM and return the thermal	Resp. Center: 002401-GEN, MGR.	MILL CREEK STATION	Product	Code: 111 - WHOLESALE GEN	IERATION
The thermal insulation on the Mill Creek Unit #2 sootblower thermal drain piping at the main floor & mezzanine elevations contains asbesics, fine insulation is 36 years old and in a deteriorated state, which could possibly be releasing asbesics fibers into the almosphere. There are recess where insulation has fallen off and the hot pipes are exposed, resulting to loss of efficiency and creating a potential safety hezard for pagarational and maintenance or ployages. We need to acquire the proper parmits to abate the damaged ACM and return the thermal	REA	SONS AND DETAILED DE	SCRIPTION OF PRO	DIECT	
	The insulation is 36 years old and in a greas where insulation has fallen off a operational and meintenence omploye	ek Unit #2 scotblower therm a deteriorated state, which co and the hot pipes are expose ans. We need to acquire the	al diein piping at the i puld possibly be relea d, resulting in loss of proper permits to aba	main floor & mezzanine elevations sing espesios fibers into the atmo efficiency and creating a potential te the damaged ACM and roturn t	contains asbestos, sphere, There are salety hazard for

Costs	Capital Invostment	Cost of Removal/ Retirement	Capitol Cost Subtotal	Inital O&M Cost	Lifelimo Maintenance Cost	Q&M Cost Subtotal	TOTAL INVESTMENT
Company Labor	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contract Labor	\$13,592,00	\$30,000,00	\$43,592,00	\$0,00	\$0.00	\$0.00	\$43,592.00
Materials	\$10,680.00	\$4,000.00	\$14,680.00	\$0.00	\$0.00	\$0.00	\$14,660.00
Other	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Salvage	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Local Engineering	\$728.00	\$1,020,00	\$1,748.00	\$0.00	\$0.00	\$0.00	\$1,748.00
Sublotal - GAAP	\$24,980.00	\$35,020.00	\$60,000.00	\$0.00	\$0.00	\$0.00	\$60,000.00
Contributions	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Not Expenditures - GAAP	\$24,980.00	\$35,020.00	\$60,000.00	\$0.00	\$0.00	\$0,00	\$60,000.00
Cepitalized Interest	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	50.00
Net Expenditures - IFRS	\$24,980.00	\$35,020.00	\$60,000.00	\$0.00	\$0.00	\$0.00	\$60,000.00
2009 Total	\$10,980.00	\$35,020.00	\$45,000.00	\$0.00	\$0.00	\$0.00	\$46,000.00
2010 Total	\$14,000,00	\$0,00	\$14,000.00	\$0.00	\$0.00	\$0.00	\$14,000.00

Approval Type: Ron-IT Projects

Authorized by	Amount	Name	Date Approved	Rogic
Supervisor	\$25,000.00			N
Manager	\$100,000.00	Oldelot, Joseph	10/22/2009	Y
Budget Coordinator	\$0.00	Dowd, Daborah	10/26/2009	Υ
Commercial Operations Manager	\$0.00	Cook, David	10/22/2009	Υ
Special Approvors	\$0.00	Henry, James for Kirkland, Kenneth	10/22/2009	Υ
Budget Caordinator	\$0.00	Pance, Merk	10/22/2000	Υ
Director	\$300,000,00			N
Vice President	\$750,000,00			N
Financial Planning Manager	\$0.00	Neel, Susen	10/28/2009	Υ
investment Committee Coordinator	\$0.00	Kuhi, Megan for Wright, Sheron	10/26/2009	Υ
Şenlor Olficer	\$1,000,000.00			N
OFO	\$1,000,001.00			N
CEO	\$1,000,002.00			N
Property Accounting	\$0.00	Rose, Bruce	10/29/2009	Υ

#### INVESTMENT MATERIALS

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UOP#	Utility Account Id		Quantity	Total Cost	
05698	131200	SYSTEM OF SOOT BLOWERS (05698	1	\$10,660,00	

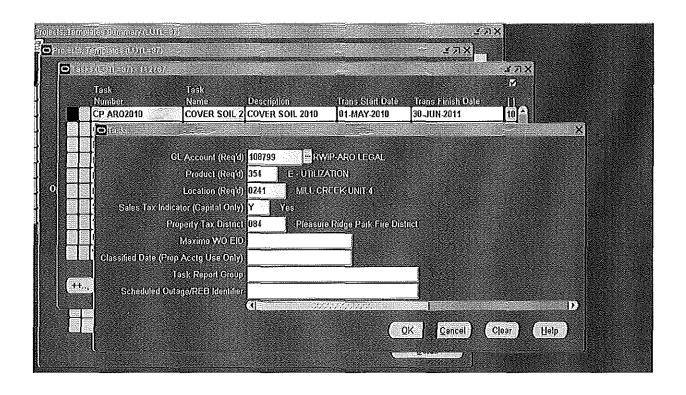
RETIRED EQUIPEMENT (OR MATERIALS)

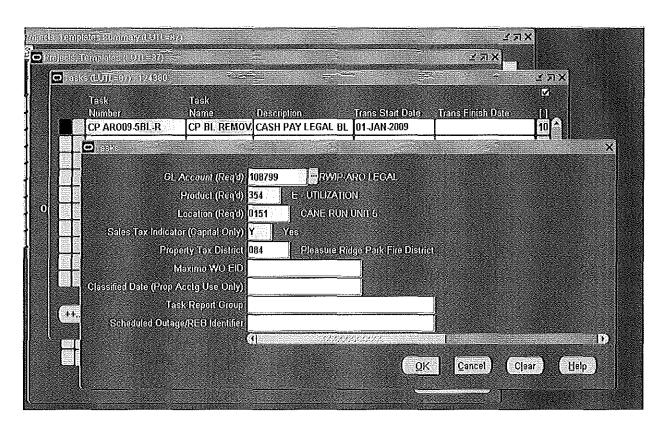
UOP#	Utility Account Id		Quantity	Vintage Year	Original Project Number
05698	131200	SYSTEM OF SOOT BLOWERS (05698	1		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

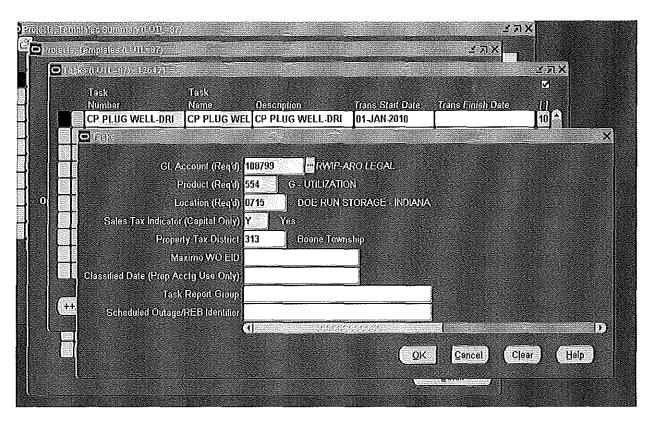
### AIP QUESTIONS

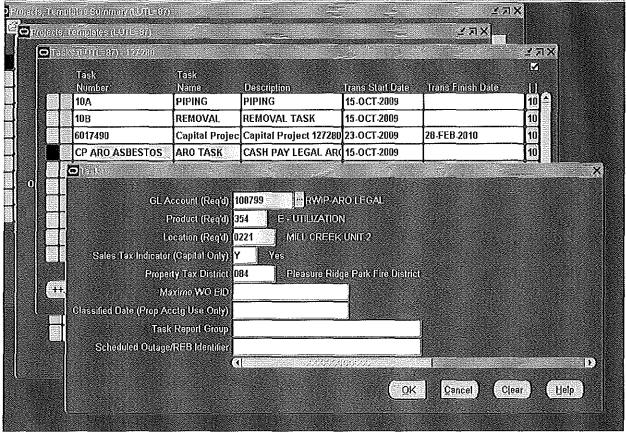
Are there Related Project Numbers?
Provide related project numbers or indicate 'NA'.

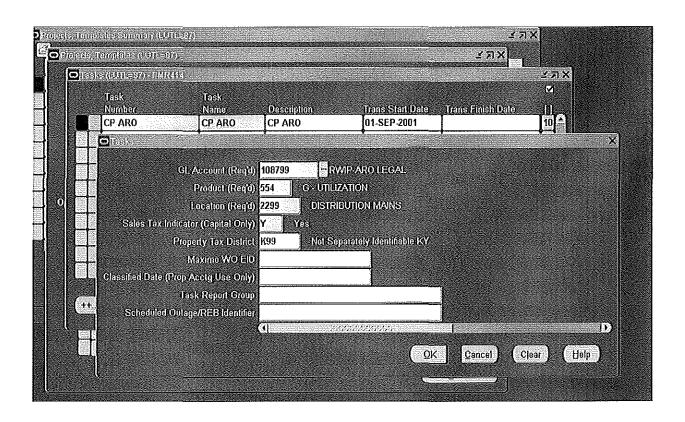
is this an IT rolated project? IT project is any project that requires IT involvement or the purchase of hardware and software.











Attachment to Response to KU AG-1 Question No. 201 Page 2006 of 2028 Charnas

### Clark, Ed

From:

Crescente, Angela

Sent:

Monday, October 10, 2011 9:37 AM

To:

'christopher.holland@ey.com'

Cc:

Wiseman, Sara

Subject:

FW: ARO Settlement Testing

Attachments:

List of ARO settlements for 2011 - E&Y request.xlsx; AIPs requested by E&Y.pdf; ARO Audit

Testing Screenshots - E&Y.docx

Chris,

I have attached project screenshots per your request for the selected settlements. Please note, the ARO RWIP account is 108799 instead of 108901 as we discussed. I have also attached the AIPs per your request. However, PMR414 does not have an AIP as it is a blanket project that does not require AIPs.

Please feel free to contact me if you have any questions.

Thanks, Angela

From: Christopher.Holland@ey.com [mailto:Christopher,Holland@ey.com]

Sent: Friday, October 07, 2011 10:22 AM

To: Crescente, Angela

Subject: ARO Settlement Testing

Angela,

As an engagement team, we have decided to test the ARO controls in two different ways. The first way, we have the support we need and can independently test. The second way will be a sample from the known ARO settlements in the year. I have selected five settlements (see attached for selections highlighted in yellow). For these, we would like to see the screen shot showing that the payments are set up in the right account but since the control also references the original AIP and the process of establishing the ARO, we are also going to want to see the original AIP for the 5 selections. Let me know if you have any difficulty gathering this support.

Thanks,

Chris



Christopher J. Holland | Assurance

Ernst & Young LLP

400 West Market St Suite 2400, Louisville, KY 40202, United States of America

Office: (502) 585-1400 | Christopher.Holland@ey.com

Website: www.ey.com

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Project	Task	ARO
112767	CP ARO2010	MC Landfill
120578	CP RETIRE MAIN	GAS MAINS AND SERVICE ABANDONMENTS
122452	CP ASBESTOS	PRESTON CITY GATE
123187	CP AROTY3ASB2008	TY3 ASBESTOS
124001	CP ASBESTOS	GR3 ASBESTOS
124260	CP ASBESTOS	BR1 ASBESTOS
124380	CP ARO09-4AH-R	CR4 ASBESTOS
124380	CP ARO09-5BL-R	CR5 ASBESTOS
124380	CP ARO09-6BL-R	CR6 ASBESTOS
124798	CP ASBESTOS	MAGNOLIA 235120
124798	CP ASBESTOS	MAGNOLIA 235300
124798	CP ASBESTOS	MAGNOLIA 235600
124802	CP ASBESTOS	MULDRAUGH 235120
124802	CP ASBESTOS	MULDRAUGH 235300
124802	CP ASBESTOS	MULDRAUGH 235600
124831	CP PLUG WELL-CTR	Center GSF UGS (Wells)
124831	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)
124831	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)
124842	CP ASBESTOS	PRESTON CITY GATE
126057	CP ASBESTOS	BR2 ASBESTOS
126160	CP ASBESTOS	TY3 ASBESTOS
126421	CP PLUG WELL-CTR	Center GSF UGS (Wells)
126421	CP PLUG WELL-DRI	Doe Run GSF UGS (Wells)
126421	CP PLUG WELL-DRK	Doe Run GSF UGS (Wells)
126421	CP PLUG WELL-MAG	Magnolia GSF UGS (Wells)
126421	CP PLUG WELL-MUL	Muldraugh GSF UGS (Wells)
127259	CP ASBESTOS	BR1 ASBESTOS
127280	CP ARO ASBESTOS	MILL CREEK 2 ASB
127297	CP ASBESTOS	BR2 ASBESTOS
130720	CP ASBESTOS	MILL CREEK 1 ASB
AROMC0241	CP 1755793	MC Landfill
LSMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS
PMR414	CP ARO	GAS MAINS AND SERVICE ABANDONMENTS

Attachment to Response to KU AG-1 Question No. 201 Page 2009 of 2028 Charnas

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LG&E Energy Service	•		sale cost elect		ا		ucky Utilities	Company
LG&E Enorgy Marketi	ng Q		dom Kontscky Erk	жуу .	1	Iras	E Power Inc.	
Other:								
Name of Project: Mill Creek	Landfill Expans	lon Construcțion						
Date Requested: 1/15/2009	[Pro]	ect Number:	112767	Related P	olecti	Yumbere:		
Budgeted [1] YX N	lf va	budgetod, list al	lernate budgel re	f. Number(	1111			
[fixpected Start Date [2]: 31/2	009 Ехр	cted in service	Dato [2]: 12/1/	2010	Вхре	ted Completion	Date [2]	(2/31/2012
AIP Prepared by: Slove Rog	Baid		Phor	e: 933	6532			
Project Manager: Kevin Leve			Phór	ie: 933	8503			
	enter [4] Loc	ation # [6]	OffU Nam Genoral			Environm	ntal Code/C	ntepory [7]
	REA		AILED DESCRIP		OJEC	ĭ		
cover soil. At that time the horizont service by the end of the first quart and fine bedgin; floodwall re-locati Construction cost eatimates dur 2012-2015.	er of 2010, Stato p on; echedulo and	ennh approval, fa cost dovolopment	a bne egniwarb isn ti ni bobulani era i	onstruction a constructi	pians h on phas	ravo boan rocelvo 50. The balance of \$	d. Sito dovek 2,828 Will be	opment, dnihaga
		Cost of			1	Lifetime		
Costs	Capital Investment	Refrement	Capital Cost Subtotal (8)	initial O		Maintenance Cost (9)	OSM Cost Subjoint	TOTAL INVESTMENT
Contract Labor	1,981 374		1,981,374					1,981,374
Majurials	913,747		013,747					013,747
Equipment Other (Describe) Contingency	2,941,980 583,757		2,941,980 583,767		+		<del></del>	2,941,980 683,767
Loss Salvage Local Engineering and AAG: 279%								
Subtotal	179,142 8,600,000	• • • • • • • • • • • • • • • • • • • •	179,142 8,600,000					179,142 6,600,000
Contr. In Ald on Constr. (CIAC) [11] Not Expanditures - GAAP	6,600,000		5,600,000		-;}	-		6,900,000
Capitalized interest (d'applicable)* Net Expenditures - IFRS	8,600,000		8,800,000					8,600,000
		milited (Blased or	n CAPITAL GOST	SUPTOTA	1 0011	INNI MI	<u> </u>	
Authorized by			Typed or Print	d Name		Signature		Date
<ol> <li>Supprvisor/Team Leader (No. 2 Commercial Operations Management)</li> </ol>	WAL 1131		Storo Reg Dave Co			Dout of	Jan .	3/1/09
3 Manager (Non-IT > 125k up to	\$100k; IT >\$25k	up to \$50k)	Jim Hen	Y	(les	n Idani	1	3/2/09
<ul> <li>Director (Non-IT &gt;\$100k up to</li> <li>OBU Budget Coordinator [14]</li> </ul>	5 \$300k; IT >\$50k	up to \$100k)	Michael Kirl Doborah A.	dand,	974	KK STE	7,	3/2/09
<ol> <li>Financial Planning (Non-IT as projects; all Development Pro Committee Coordinator (Non- Development &gt;\$500k) [16]</li> </ol>	xiii>\$300%; ediu posata) [14] orinv ii>\$1.0%; ii>\$5	astment Ook;	C. Hulsi		Ch	is lan	Sua	
<ol> <li>Vice President (Non-IT&gt;\$300 to \$200k; Dovelopment up to</li> </ol>	\$200k)		Relph Box	¢ng	Ka	LLX		3/4/09
<ol> <li>Senior Officer (Non-IT&gt;\$750k to \$500k; Dovelopment&gt;\$200</li> </ol>	up to \$1.044: [[>1	200k up	Poul W. Ther	.,	41.9	Mudden	1024	3/5/09
B CFO (Non-IT >\$1,0M; IT >\$50 [16]	XX; Dovelopment	>\$500k)	Bred Riv		7	3/3/Dia	u	3/9/09
10 CEO (Non-17 >\$1.0M up to €2 €20.0M; Dovolopment >\$500)			Vic Staffs			A	<del></del>	2/1/6/16
11 E.On Board (Non-IT, IT, and Development		***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			<del>/</del>		
12 Information Technology (17)		**************************************	Yony Ha					
<ul> <li>Director of Operating Services</li> <li>Property Accounting (including</li> </ul>	[18]		Kathloon A. Bruco M. R	86V		·	2	-AN VI
14 1 About twentinist furthfull	I sooBartikes()	l	איניסט או, ת	V-97	70	the find	Elfocity	32007 (D/10/08)

# Attachment to Response to KU AG-1 Question No. 201 Page 2010 of 2028 Charnas

•				Project N	imper:	112767	
Accounting (* -Upon redirement disposal of this -Does this projection will this projection.	nt of the new asset? of involve a l		ninsevog teke	99	Y X Y		X X
li yes, indicate p li yes, also prov	onmentel Cos project type: ide ECR con	t Recovery (ECR) project?  Air Water  appliance plan number;  od for ECR and other environmental issues	oleaW [	X	Y X  Holse  Intolend Date	] ;	:[
ls this an experi process at a pla	mentel project nt facility?	i (R&E) Credit [21]: It with the purpose of improving, enhancing, or add er at 502-627-2796 in the Tax Department to deler	,		Υ	] N	X
. Is this project of a constant of the constan	done for envi nay qualify fo all three quas	nt Tasks only [22]: ronmental regulations or statutes (a)? r the Pollution Control Exemption) silons below is yas, this may qualify for the New & t the Manufecturing Process (b)?	Expanded ex	emplion.	Y X	м [ м [	
uls this project	considered a	ne state for the first time (c)? In upgrade of Improvement (d)? In upgrade (i.e., improved materials, increased capa	clly, langar li	fe, etc);	Y	М И	×
•		INVESTMENT MATERIAL	3.				
, Task Number 50A	UOP# 5391	Vartical Closure - Misc. materials for vartical landfill cic plping and concrete drainage diliches	oseout Includin	g drainage	Quantity Lot	Total Cost 407,330	
70A	6391	Horizontel Expansion - Misc. materials for horizontal la stone, drakage piping, concrete drainage dilches, line	ndfill constructs and leachat	tion (ncluding	Lot		46,417
				Tolál		913,747	
Task Number	UOPII	REYIRED EQUIPMENT (OR MATE	RIALS)		dginal Rumber	Vintego Year	Qly
				144			
*,	······································			·····			
**		SALVAGE & TRANSFERRED EQUI	PMENT				
Task Number	UOPII	Units of Property Description rive	Salyaga Slock (returned to starstoom)	Salvage Junk (edd to 3:d party)	Salvage Equipment	Transl Equip	
		**************************************					
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			(18	243	382			台	Original Revised
EON U.S. Services Co.		X Lou!	SA'RO GOS & EISCU				uçky Utililəs	Compan	ť
LG&E Energy Marketing	<b>,</b>	Wes	lern Kenlucky Ens	18Y		LGS	E Power inc.		
Others						*****			
	s Abatement 200	9		<del>~~~~~</del>					
Date Requested: 3/1/2009		et Humbor:	124380	Related P	to ect	Numbere:			
Budgeted [1] Y X ) A	Ifun	budgeted, list sit	emale budget rel	. Number	0} [];				
Expected Start Date [2]: 41/20	09 Expo	cled in service (	ate [2]: 12/31	/2009	Expo	ciad Completion	Dale [2]:	12/31/20	009
AIP Prepared by: Yim Harder			Phon	P; 449	8860				
Project Manager: Steve Legis	<u>(                                    </u>		Phor	9: 449	3644				
	enter [4] Loc	allon#[6] 181	ODU Nam Regulated Go			Environm	ental Codel	alegory	7
	REA		ULEO DESCRIPTI ikeich no., if sopik		OJEO	7			
Avivancy is requested to continue the		992 to minimize a	nd abate known or	id polenta					
Plant facilities. The absternant proje of known and potential employee ex	ci was covercibed posures of asbasic	as a resum or an A Sa. High priority K	ewa wata juwedy rapastoa 1928 Lot	rjejt aggte. ce dalama	ised M	hijə olhar areas ar	o pejuð skqu e pejuð skqu	ssed as i	Piant
maintenance la required.									ł
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······································		Cost of				Lifetime	]	1	l l
Costs	Capital Investment	Removal/ Retirement	Capital Cost Subtotal (8)	initial C Cost		Maintenance Cost [9]	OBM Cost Subtotal		TAL
Company Labor Contract Labor	77,536	120,000	197,638						197,636
Malerials	85,000	5,000	76,000						70,000
Oihor (Describe) Less Salvago							· · · · · · ·		
Local Engineering (19) Subtotal - GAAP	3,977 146,513	3,488 128,488	7,484 275,000	_,,					7,484 275,000
Contr. to Ald on Constr. (CIAC) [15]		320,400	2/0,000						•
Net Expanditures - GAAP Gapitalizad Interest (if applicable) [12	146,613	128,488	276,000		·;				275,000
Net Expenditures - IFRS	148,613	128,488	275,000					L.,,	276,000
1.46	Signature Rec	u)iod (Oased on	CAPITAL COST	SUBTOTA	L COL	OWH) [8]:		F -	···
Authorized by  1. Supervisor/Team Leader (Non-	IT and IT up to \$2	5k)	Typed or Print	od Name		Signaturo		Di	ato
2 Commercial Operations Manag	er [13]		Dan Krem			en kur-	<del></del>		01
3 Monager (Non-IT >\$25k up to \$ 4 Director (Non-IT >\$100k up to \$	300k; IT >\$26x 0;	p to \$50k)	Stove Leg Stove Tur		10			3-6	209
<ol> <li>OBU Budget Coordinator [14]</li> </ol>			Deborah D			tion	<i></i>	316	09
<ol> <li>Financial Planning (Non-I) end projects; ell Development Prop</li> </ol>									1
Committee Goordinator (Non-1) Development > \$500k) [16]	C>\$1.0%; (T>\$50)	Ok;	t		1				
7. Vice-President (Non-IY>\$300k		100k ty	.i						$\neg \uparrow$
to \$2003; Davelopment up to \$2003; Davelopment		00k up			<b> </b>				
In \$500k; Development >\$200k  OFO (Non-IT >\$1.0M; IT >\$500		\$500k)		<del></del>					
[16] 10 CEO (Non-IT >\$1.03/ up to €25					<u> </u>				
€25,0%; Davalopment >\$500k			······································		ļ				
(Non-IT, IT, and Development >	€25.03()	ļ			ı		1		1
12 Information Technology [17]		<u></u>			<u> </u>				
13 Director of Operating Services		-				2 intop			

Attachment to Response to KU AG-1 Question No. 201 Page 2012 of 2028 Charnas

				Project N	amper:	12438	0
disposal of this	ent of the new sesset?	asset, does a legal or environmental requiremen	t <del>e</del> xist governi:	ng	Y	] <u>}</u>	×
	ect involve a i				Y	4 1	<u> </u>
•Will this proje	cf creste opaol	lele inventory?			Υ	<u> </u>	1X
Environment Is this on Envi If yes, indicate	ronmentat Cos	t Recovery (ECR) project?	☐ Wast	0	Y	] ,	i_x
li yes, also pro	vide ECR con	npliance plan number:				_	
For Engloamental .	Affairs only - review	rad for EGR and other environmental lesues			Initial and Date		
is this an expe process at a pl If yes, check w R&E credit.	rimental project ant facility? ith Date String	I (R&E) Credit [21]: It with the purpose of improving, enhancing, or a er at 502-627-2796 in the Tex Department to del			Y	] ,	ı X
-is this projec (If yes, this	i dono for envi may qualify fo	int Tasks only [22]: ironmental regulations or statutos (a)? ir the Pollution Control Exemption)	<b>. –</b>		У	) N	Х
-is this projec	l Integrated in	slions below is yes, this may qualify for the New ( the Manufacturing Process (b)? he state for the first time (c)?	k Expanded ex	emplion.	Y X	и <b>[</b> и [	×
is this projec	t considered a	n upgrade or improvement (d)? opplicable (l.e., improved materials, increased ca	pacity, longer i	ile, etc):	Y	<u></u> М	×
		INVESTMENT MATERI	ALB			Υ	
Task Number 10A	UOP# Various	Construction to verticus areas and UOPs with in Car	e Run Plant		Quantity Total Co Various 65		1 Cost 65,000
	**********						
		1			1	<del> </del> -	
					ļ		
						<del> </del> -	
. <u></u>				Total	_	1	65,000
		RETIRED EQUIPMENT (OR MA	TER(AL8)				
Task Missakas	Hook		<del>} _++====================</del>		)riginal	Vintago	0.5.
Task Number	Various	Construction to various areas and UOPs with in Can	e Run Plant		ct Number 18142	Year	Qly Various
				ļ			
		<u> </u>		l .		Ļl	
		SALVAGE & TRANSFERRED EC	UIPMENT				
				Salvage			
Task Number	UOP#	Units of Property Description	Salvage Stock (returned to alexercom)	Junk (rest to stat perty)	Salvego Equipment	Trans Equip	
	<del></del>			<del></del>	ļ <del></del>		
		Total	<del>                                     </del>	-			
<u></u>	***********	**************************************				·	

Ellective 12/18/07

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# AUTHORIZATION FOR INVESTMENT PROPOSAL - REVISION

☐ LG&E and KU Services Co. ☐ Louisville Gas and Electric Co. ☐ Kentuc		☐ Kentucky Ulikies Company			
Name of Project: 2010 PLUG AND RE	PAIR WELLS	Funding P	roject Ty	ipo: Ge	as UG Stor NonBl Task Level Unitiz
Date Requested: 6/30/2009	Project Numb	er: 12842	}	F	Budgeled: no
Related Project Numbers: Na	-				budgot rof, Numbor(s): 15K, MAN414 \$100K, 120423 \$82k
Expected Start Date: 1/1/2010	Expected in Service (	Date: 12/1	/2010	<del> &amp;</del>	Expected Completion Date: 12/1/2010
AIP Propared by: Sundheimer, Glenn				Phono:	502/333-1885
Project Manager: Sundhelmer, Glenn			÷;	Phono!	502/333-1885
Asset Location: Magnolis Storage Field	, <u>, , , , , , , , , , , , , , , , , , </u>	<u> </u>	Environ	mental C	ode:
Roap, Contor: 004475-DIR, GAS CON	TROL AND STORAGE		Produc	Code: 1	31 - GAS COMMON
REASON	N9 AND DETAILED DE	NOITHING	OF PRO	JECT	
This project involves plugging and repairin Wells with correded cosing for which relial Plugging and repairing wells is cruciel for t	na is not viable will eithe	er he builded	. naiche	n arifdet	hetleger grahus odincen erg zing

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Costs	Capital Investment	Cost of Removal Retirement	Gapital Cost - Subtotal	Inital O&M Cost	Lifetime Maintenance Cost	O&M Cost Subtolal	TOTAL INVESTMENT
Company Labor	\$0.00	507,177.73	\$67,177.73	\$0.00	\$0.00	\$0.00	\$67,177.73
zCompany Labor	\$0.00	\$0.00	\$0,00.	\$0.00	\$0.00	\$0.00	\$0.00
Contract Labor	\$0.00	\$370,348.23	\$370,348.23	\$0.00	\$0.00	\$0.00	\$370,348.23
zContract Labor	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Materials	\$7,000.00	\$20,823.90	\$27,823.90	\$0.00	50.00	\$0.00	\$27,823.90
złdatorials	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Oihet	\$0.00	\$17,521.86	\$17,521.86	\$0.00	\$0.00	\$0.00	\$17,521.86
zÓlher	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Local Engineering	\$0.00	\$37,128.28	\$37,128,28	\$0.00	\$0.00	\$0.00	\$37,128.28
zLocat Engineering	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subtolal - GAAP	\$7,000.00	\$513,000.00	\$520,000.00	\$0.00	\$0.00	\$0.00	\$520,000.00
Net Expenditures - GAAP	\$7,000.00	\$513,000.00	\$520,000.00	\$9.00	\$0.00	\$0.00	5520,000.00
Net Expenditures • IFRS	\$7,000.00	\$513,000.00	\$520,000.00	\$0.00	\$0.00	\$0.00	\$520,000.00
2010 Tolal	\$7,000.00	\$513,000.00	\$520,000.00	\$0.00	\$0.00	\$0.00	\$520,000.00

Approval Type: Non-IT Projects

Authorized by	Amount	Namo	Date Approved	Req'd
Suparvisor	\$25,000.00			N
Manager	\$100,000,00	Skeggs, John	12/20/2010	Y
Budget Courdinator	\$0.00	Porter, Janico	12/20/2010	Υ
Diractor	\$300,000.00	Walker, Barry	12/21/2010	Ÿ
Vice President	\$750,000.00	Hulf. David for Malloy, John	12/21/2010	Ÿ
Investment Committee Coardinator	\$0.00	Kuhl, Megan	12/21/2010	Y
Pinencial Planning Director	\$0.00	Garrett, Christopher	12/21/2010	Y
Senior Officer	\$1,000,000.00			N
ÇFQ	\$1,000,001.00			N
CEQ	\$1,000,002.00			N
Property Accounting	\$0.00	Leonerts, Patricia	12/22/2010	γ

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UOP#	Utility Account id		Our wife.	Yetal Ocas	
1001 W	Atilità vièèèènist in		Quantity	Total Cost	i
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RETIRED EQUIPEMENT (OR MATERIALS)

Traiting and Silinit factions of									
UOP#	Utility Account Id		Quentity	Vintage Year	Original Project Number				
	· · · · · · · · · · · · · · · · · · ·								

# AIP QUESTIONS

Are there Related Project Numbers?
Provide related project numbers or indicate 'N/A'.

is this on it related project?

IT project is any project that requires IT involvement or the purchase of hardware and software.

Purchase/Sale of Real Estate?

Is this a transaction related to the sale/purchase of land or buildings?

no

Attachment to Response to KU AG-1 Question No. 201 Page 2015 of 2028 Charnas

	AUTHORIZATION FOR IN	<b>VESTME</b>	ит ркорс	SAL - OR	IGINAL (12/28	$(\mathcal{O})$
EON U.S. Services Co.	🛛 Louisville G	as and Ele	ciric Co.		Kenlocky Utilillos Com	· /
Name of Project: MC2 Sootblower	Pipe Insulation	Funding	Project Ty	pe: LG	E Stoom NonBlak Excluding L	and
Date Requested: 10/15/2009	Project Numi	or: 127	280	E	Judgeled: no	· · · · · · · · · · · · · · · · · · ·
Related Project Numbers: N/A			ith money		oudget ref. Number(s); allocated to project 122897 will	hin
Expected Start Date: 11/18/2009	Expected in Service (	)ate: 1/	4/2010		Expected Completion Date;	1/1/2010
AIP Prepared by: Cecil, Ray Phone: 502/933-5808						
Project Manager: Cecil, Ray Phone: 602/933-9808						
Asset Location: Mill Greek Unit 2 Environmental Code: N/A						
Resp. Center: 002401-GEN. MGR.	MILL CREEK STATION		Product	Code: 1	11 - WHOLESALE GENERATI	ON
REA	SONS AND DETAILED DE	SCRIPTIO	ON OF PRO	JECT		
The thermal insulation on the him Crea The insulation is 36 years old and in a areas where insulation has failen off a operational and maintenance employe insulation system back to engineered i	thing the model of	al drein pla puld possit d, resultin proper per	olog at the oly be relea g to loss of mils to aba	nain floor sing asber officiency to the dan	sios fibers into the simosphere, and croating a potential safety maged ACM and return the them	ns asbesios. There are hazard for
				V	,	

# Attachment to Response to KU AG-1 Question No. 201 Page 2016 of 2028 Charnas

Gosis	Capital Invostment	Cost of Removal/ Retirement	Capital Cost Subtotal	Inital O&M Cost	Lifolimo Maintenanco Cost	O&M Cost Subtotal	TOTAL INVESTMENT
Company Labor	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contract Labor	\$13,592,00	\$30,000,00	\$43,692,00	\$0,00	\$0.00	\$0.00	\$43,592.00
Meterials	\$10,680.00	\$4,000.00	\$14,660.00	\$0.00	\$0.00	\$0.00	\$14,660.00
Other	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Salyaga	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Local Engineering	\$728.00	\$1,020.00	\$1,748.00	\$0.00	\$0.00	\$0.00	\$1,748.00
Subtotal - GAAP	\$24,980.00	\$35,020.00	\$60,000.00	\$0.00	\$0,00	\$0.00	\$60,000.00
Contributions	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Not Expenditures - GAAP	\$24,980.00	\$35,020,00	\$60,000.00	\$0.00	\$0.00	\$0,00	\$60,000.00
Capitalized Interest	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	50.00
Net Expenditures - IFRS	\$24,980.00	\$35,020.00	\$60,000.00	\$0.00	\$0.00	\$0,00	\$60,000.00
2009 Total	\$10,980.00	\$35,020.00	\$45,000.00	\$0.00	\$0.00	\$0.00	\$46,000.00
2010 Total	\$14,000,00	\$0,00	\$14,000.00	\$0,00	\$0.00	\$0.00	\$14,000.00

### Approval Type: Non-IT Projects

Authorized by	Amount	Name	Date Approved	Regio
Supervisor	\$25,000.00			N
Manager	\$100,000.00	Oldelot, Joseph	10/22/2009	Y
Budget Coordinator	\$0.00	Oowd, Deboreh	10/28/2009	Υ
Commercial Operations Manager	\$0.00	Cook, David	10/22/2009	Υ
Special Approvers	\$0.00	Henry, James for Kirkland, Kenneth	10/22/2009	Υ
Budget Coordinator	\$0.00	Pence, Mark	10/22/2000	Υ
Director	\$300,000,00			N
Vice President	\$750,000,00			N
Financial Planning Manager	\$0.00	Neal, Susan	10/28/2009	Υ
Investment Committee Coordinator	\$0.00	Kuhl, Megan for Wright, Sharon	10/26/2009	Y
Senior Officer	\$1,000,000.00			N
CFO	\$1,000,001.00			N
CEO	\$1,000,002.00			N
Property Accounting	\$0.00	Rose, Bruce	10/29/2009	Y

### INVESTMENT MATERIALS

UOP#	Utility Account id		Quantity	Total Cost	
05698	131200	SYSTEM OF SOOT BLOWERS (05698	1	\$10,660,00	

RETIREO EQUIPEMENT (OR MATERIALS)
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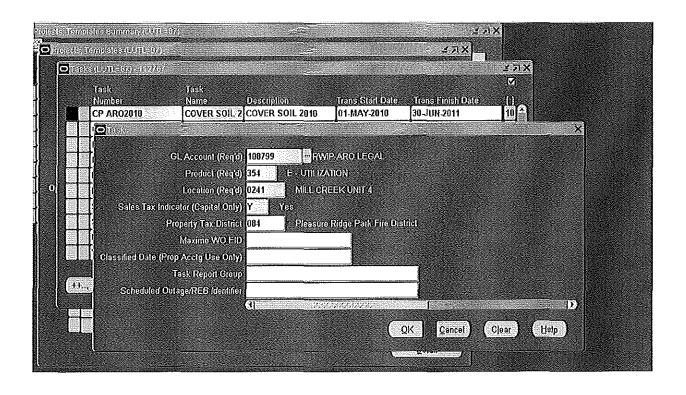
UQP #	Utility Account Id		Quantity	Vintage Year	Original Project Number
05598	131200	SYSTEM OF SOOT BLOWERS (05698	1		

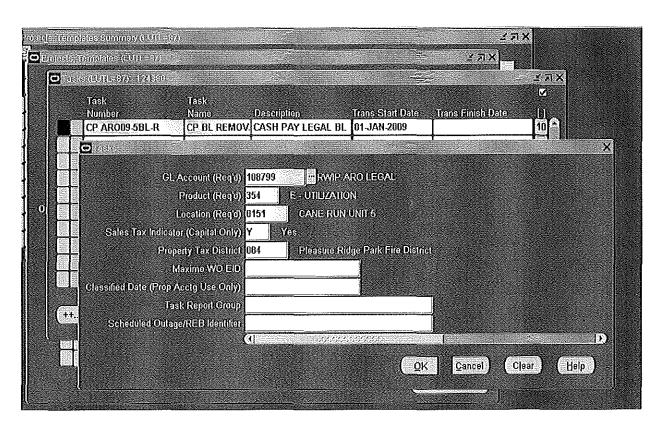
#### AIP QUESTIONS

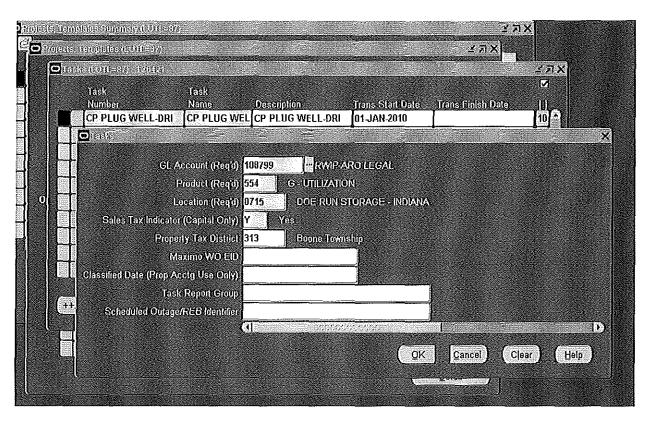
Are there Related Project Numbers? Provide related project numbers or indicate 'N/A'. N/A

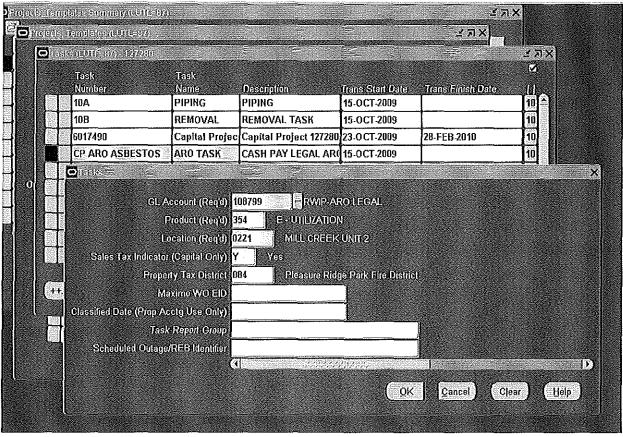
is this an IT related project?

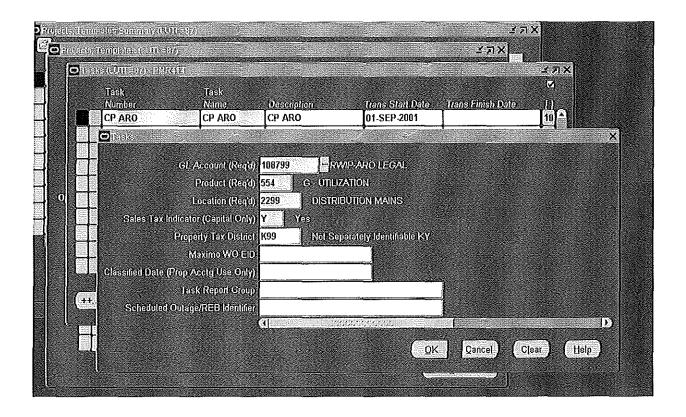
IT project is any project that requires IT involvement or the purchase of hardware and software.











Attachment to Response to KU AG-1 Question No. 201 Page 2020 of 2028 Charnas

# Crescente, Angela

From:

Ritchey, Stacy

Sent:

Friday, July 15, 2011 11:49 AM

To:

Crescente, Angela

Subject:

RE: Brown Main Pond Close Out

Angela,

Just to verify on the budget side, you do want us to budget the capping costs on the landfill to ARO account, 108799, correct? I have the same question for the CCR EPA Ruling projects, last year we just put them to removal not ARO, but it is a significant amount of money (\$619M).

Thanks,

Stacy

From: Crescente, Angela

**Sent:** Friday, July 15, 2011 10:41 AM **To:** Raque, Gary; Ritchey, Stacy

Subject: RE: Brown Main Pond Close Out

Please be sure to let me know when you begin construction on the new landfill (inserting the first bottom layer) so I can remove the main ash pond's liability.

Thanks, Angela

From: Raque, Gary

Sent: Friday, July 15, 2011 10:39 AM

To: Crescente, Angela

Subject: RE: Brown Main Pond Close Out

### Angela,

Due to our conversation today we will not be charging ARO or removal charges to the Brown CCR ash pond. At this time we will not be utilizing an ARO task.

From: Crescente, Angela

Sent: Friday, July 15, 2011 9:34 AM

To: Raque, Gary

Subject: RE: Brown Main Pond Close Out

Gary,

Attachment to Response to KU AG-1 Question No. 201 Page 2021 of 2028 Charnas

I haven't seen any charges on this task yet, but it is my understanding (based on what I heard in the meeting we were just in) that the pond has been drained and construction is being started on the landfill conversion. I was just wondering where the closeout of the ash pond charges have been going.

Thanks, Angela

From: Raque, Gary

Sent: Monday, June 20, 2011 3:51 PM

To: Crescente, Angela

Subject: RE: Brown Main Pond Close Out

Yes its being converted to a Landfill

From: Crescente, Angela

Sent: Monday, June 20, 2011 3:49 PM

To: Raque, Gary

Subject: RE: Brown Main Pond Close Out

I have set up a task called CP ARO for this purpose. Is the whole ash pond being closed?

From: Raque, Gary

Sent: Monday, June 20, 2011 3:38 PM

To: Crescente, Angela

Subject: Brown Main Pond Close Out

### Angela,

Just wanted to bring to your attention that we will probably have charges this year related to "closing out" of the Brown CCR Main Pond (Project #132371). This will need to have an the ARO task set up. I know that you set them up before.

Gary Raque LG&E and KU Energy LLC Project Engineering BOC 3

Phone: (502) 627-3241 Fax: (502) 217-2801 gary.raque@lge-ku.com

# Clark, Ed

From:

Wiseman, Sara

Sent:

Sunday, January 16, 2011 2:48 PM

To: Cc: Charnas, Shannon Crescente, Angela

Subject:

RE:

#### Shannon:

My recollection is that we decided to use what numbers are available in the MTP and then we completed a GLAFF to have the new ST accounts numbers set up. I looked back at my emails and I set the new numbers up back in September—a lot has happened since then, so maybe my wires got crossed. I'll be glad to have them mapped back to the ARO line if that is the decision.

From: Charnas, Shannon

Sent: Sunday, January 16, 2011 2:35 PM

To: Wiseman, Sara; Scott, Valerie; Erskine, Greg

Cc: Pienaar, Lesley; Crescente, Angela

Subject: RE:

PPL does classify some of their AROs as short term – related to the asbestos abatement, I believe. We had not decided to reclassify any of our AROs to current. I thought in discussions, we were not readily able to determine what the current amount of the asbestos abatement would be for us. If this has changed, we can discuss.

### Shannon Charnas

Director, Utility Accounting & Reporting LG&E and KU (502) 627-4978

From: Wiseman, Sara

Sent: Sunday, January 16, 2011 2:22 PM

To: Scott, Valerie; Erskine, Greg

Cc: Pienaar, Lesley; Charnas, Shannon; Crescente, Angela

Subject: RE:

### Valerie:

These are new accounts that were set up during the mapping exercise earlier in the year in order to be consistent with PPL. It is my understanding that they also classify some of the obligations as current. We have moved the short term obligations to these accounts (based on the MTP as was agreed at the time we set up the accounts). The mapping appears correct based on previous decisions, but of course can always be changed.

Sara

From: Scott, Valerie

Sent: Sunday, January 16, 2011 1:54 PM

To: Erskine, Greg

Attachment to Response to KU AG-1 Question No. 201 Page 2023 of 2028 Charnas

**Cc:** Wiseman, Sara; Pienaar, Lesley; Charnas, Shannon **Subject:** 

Greg,

The following two accounts are mapped to other current liabilities in your consolidation and should be mapped to AROs. Would you work with Sara to make the correction?

ASSET RETIREMENT OBLIGATIONS -

230022 STEAM - ST

ASSET RETIREMENT OBLIGATIONS - GAS -

230026 ST

Valerie

Attachment to Response to KU AG-1 Question No. 201 Page 2024 of 2028 Charnas

### Clark, Ed

From:

Wiseman, Sara

Sent:

Sunday, January 16, 2011 2:22 PM

To:

Scott, Valerie; Erskine, Greg

Cc:

Pienaar, Lesley; Charnas, Shannon; Crescente, Angela

Subject:

RE:

### Valerie:

These are new accounts that were set up during the mapping exercise earlier in the year in order to be consistent with PPL. It is my understanding that they also classify some of the obligations as current. We have moved the short term obligations to these accounts (based on the MTP as was agreed at the time we set up the accounts). The mapping appears correct based on previous decisions, but of course can always be changed.

Sara

From: Scott, Valerie

Sent: Sunday, January 16, 2011 1:54 PM

To: Erskine, Greg

Cc: Wiseman, Sara; Pienaar, Lesley; Charnas, Shannon

Subject:

### Greg,

The following two accounts are mapped to other current liabilities in your consolidation and should be mapped to AROs. Would you work with Sara to make the correction?

ASSET RETIREMENT OBLIGATIONS -

230022

STEAM - ST

ASSET RETIREMENT OBLIGATIONS - GAS -

230026

ST

#### Valerie

Attachment to Response to KU AG-1 Question No. 201 Page 2025 of 2028 Charnas

# Clark, Ed

From:

Hudson, Rusty

Sent:

Wednesday, December 28, 2011 9:21 AM

To:

Cc:

Heun, Jeff; Straight, Scott Wiseman, Sara; Crescente, Angela

Subject:

Updated ARO estimate for ash pond closures

Sara said if she could have your updated estimate by Tuesday next week (the 3<sup>rd</sup>), they could then record the entry if it is materially different. To be clear, we are going down the path of:

- 1. What would be the cost of closing a pond under existing law (the \$120k number that Jeff is going to update/revise).
- 2. The expected retirement of the existing coal fired units does not mean that the pond(s) would have to be closed at the same time the coal units are retired or shortly thereafter. Therefore they will keep the further out closure dates that they currently are using, as opposed to going with the closure dates that we have in the 2012 MTP/LTP, which are based on expected future laws, not the current law. Rusty

Attachment to Response to KU AG-1 Question No. 201 Page 2026 of 2028 Charnas

# Crescente, Angela

From:

Cosby, David

Sent:

Thursday, June 30, 2011 8:46 AM

To:

Crescente, Angela Dowd, Deborah

Cc: Subject:

FW: ARO Budgets

Hey Angela. Should we budget expected ARO spending in the 3 year MTP to the 108799 account for things we know about being actual charges such as Asbestos Abatement or things like the landfill closure costs we talked about yesterday? It looks like we typically lump those in with regular RWIP for budget and then charge the actuals to the 108799. Would you all use the budgets for reference if the entire company made a point to budget to that account? Thanks.

David L. Cosby Jr.

Manager - Fin. & Budgeting - Power Generation

LG&E and KU Energy Services

502-627-2499

david.cosby@lge-ku.com

From: Dowd, Deborah

Sent: Thursday, June 30, 2011 8:30 AM

To: Cosby, David Subject: ARO Budgets

### Good Morning David,

Yesterday we were talking about AROs and budgets. It appears we, Power Generation do not budget to an ARO Account. I am certain that we have plans for this expense but we must be using the Traditional Retirement Account 108901.

The only thing that I found was Energy Delivery.

Organization	Organization Description	Account	Account Description	<b>Budget Item</b>
004480	MAGNOLIA STORAGE	108799	RWIP-ARO LEGAL	131340
004485	MAGNOLIA DISTRIBUTION, FIELD AND TRANSMISSION	108799	RWIP-ARO LEGAL	131117

Attachment to Response to KU AG-1 Question No. 201 Page 2027 of 2028 Charnas

# Crescente, Angela

From:

Crescente, Angela

Sent:

Thursday, June 30, 2011 8:52 AM

To:

Cosby, David

Cc:

Dowd, Deborah

Subject:

**RE: ARO Budgets** 

David,

We actually do already have some projects that are being budgeted to 108799 in the current MTP and those are the ones that I took the spending for 2011 and moved them to the short-term account like we talked about yesterday. So, my answer would be yes if you have projects that meet the 108799 criteria.

Thanks, Angela

From: Cosby, David

Sent: Thursday, June 30, 2011 8:46 AM

**To:** Crescente, Angela **Cc:** Dowd, Deborah

Subject: FW: ARO Budgets

Hey Angela. Should we budget expected ARO spending in the 3 year MTP to the 108799 account for things we know about being actual charges such as Asbestos Abatement or things like the landfill closure costs we talked about yesterday? It looks like we typically lump those in with regular RWIP for budget and then charge the actuals to the 108799. Would you all use the budgets for reference if the entire company made a point to budget to that account? Thanks.

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Manager - Fin. & Budgeting - Power Generation

LG&E and KU Energy Services

502-627-2499

david.cosby@lge-ku.com

From: Dowd, Deborah

Sent: Thursday, June 30, 2011 8:30 AM

To: Cosby, David Subject: ARO Budgets

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The only thing that I found was Energy Delivery.

Attachment to Response to KU AG-1 Question No. 201 Page 2028 of 2028 Charnas

Organization	Organization Description	Account	<b>Account Description</b>	Budget Item
004480	MAGNOLIA STORAGE	108799	RWIP-ARO LEGAL	131340
004485	MAGNOLIA DISTRIBUTION, FIELD AND TRANSMISSION	108799	RWIP-ARO LEGAL	131117