Steven L. Beshear
Governor

Leonard K. Peters
Secretary
Energy and Environment Cabinet

Commonwealth of Kentucky
Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
Fax: (502) 564-3460
psc.ky.gov

David L. Armstrong
Chairman

James W. Gardner
Vice Chairman

Daniel E. Logsdon Jr.
Commissioner

June 24, 2015

PARTIES OF RECORD

Re: Case No. 2015-00194
Investigation of Kentucky Utilities Company's and Louisville Gas and Electric Company's Respective Need for and Cost of Multiphase Landfills at the Trimble County and Ghent Generating Stations

Attached is a copy of a memorandum which is being filed in the record of the above-referenced case. If you have any comments you would like to make regarding the contents of the memorandum, please do so within five days of receipt of this letter.

If you have any questions, please contact Jonathan Beyer, Staff Attorney, at (502) 782-2581.

Sincerely,

Jeff Derouen
Executive Director

JB/ph

Attachments

INTRA-AGENCY MEMORANDUM

KENTUCKY PUBLIC SERVICE COMMISSION

TO: Case File – Case No. 2015-00194

FROM: Jonathan Beyer, Staff Attorney

DATE: June 24, 2015

RE: Informal Conference of June 19, 2015

Pursuant to a June 16, 2015 Commission Order, an informal conference was held in this matter on June 19, 2015. A list of attendees is attached.

Counsel for Louisville Gas & Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively the "Companies"), Mr. Kendrick Riggs, presented opening remarks wherein he asserted that Sterling Ventures, LLC's ("Sterling Ventures") proposal related to the disposal of ash from the Trimble County generating station is neither feasible nor least cost and argued that the Commission lacks the authority to compel the Companies to enter into a specific contract with a potential third party vendor. He noted that the Companies' plan to issue a request for quotes to construct the Trimble County landfill in July of 2015 and to award the contract in late October or early November 2015, to enable its completion in 2018. To maintain that schedule, Mr. Riggs expressed the Companies need for a Commission Order adjudicating this matter by October 1, 2015.

Mr. John Voyles followed with a presentation for the Companies, a copy of which is attached to this memorandum. Mr. Voyles detailed the current status of the Companies' requested 404 permit, which the Companies expect to receive in the near future. Mr. Voyles noted that there is not currently sufficient storage capacity in the Sterling Ventures mine and the Companies did not deem it financially prudent to commit to a 37 year limestone purchase contract from Sterling Ventures to ensure sufficient future capacity in the mine. He further explained the Companies' belief that storing coal combustion residues ("CCRs") in Sterling Ventures' mine would not qualify as beneficial reuse under the new CCR Rule. Additionally, the Companies asserted that transporting the CCRs to the mine would present certain difficulties that would require additional expenses, such as providing for temporary CCR storage at the Trimble County Generating Station in the event Ohio River barge traffic was impeded. The Companies distributed a copy of the Evaluation of Trimble County Coal Combustion Residual Storage Options prepared by its Generation and Analysis group and a copy of a letter to the Louisville District Corps of Engineers from the United States Environmental Protection Agency related to the Trimble County landfill project, both of which are attached to this memo.

Mr. John Walters for Sterling Ventures agreed that the mine could not compete with the cost to construct phase 1 of the landfill, but given the increased total project

cost for all phases, the mine has become a viable option. He indicated that both state and federal officials have agreed that utilizing CCRs to fill voids and create baffles in the mine would qualify as beneficial reuse. He asserted that if the CCRs do not require drying prior to transporting, the mine would be $256M cheaper compared to the landfill or $46M cheaper if a drying facility is required. Mr. Walters distributed a handout labeled Exhibit 6C, Sterling Materials – Verona, KY, Underground Cross Section. The handout is attached to this memo.

The Companies stated that none of Mr. Walters' claims regarding his talks with federal and state officials are documented. The Companies also stated that they performed a least-cost analysis as required.

The parties discussed dates for a procedural schedule and agreed upon the following:

1. Data requests to any party to be filed by July 2, 2015;
2. Parties' responses to data requests to be filed by July 16, 2015;
3. Testimony of the Companies, Sterling Ventures and any other party, in verified prepared form, to be filed by July 30, 2015;
4. Data requests relating to testimony to be filed by August 13, 2015;
5. Parties' responses to testimony data requests to be filed by August 27, 2015;
6. Rebuttal testimony to be filed by September 3, 2015;
7. Public hearing to be held the week of September 7, 2015.

Finally, Mr. Richard Raff for Commission Staff stated that the procedural dates were relatively compressed, that the Commission would have to confirm all of the dates in an Order, and that it was unknown whether a hearing could be held the week of September 7, 2015 as proposed.

Finding that no party had any further questions, the conference was adjourned.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

INVESTIGATION OF KENTUCKY UTILITIES COMPANY'S AND LOUISVILLE GAS & ELECTRIC COMPANY'S RESPECTIVE NEED FOR AND COST OF MULTIPHASE LANDFILLS AT THE TRIMBLE COUNTY AND GHENT GENERATING STATIONS	)))))	CASE NO. 2015-00194

June 19, 2015

Please sign in:

NAME	REPRESENTING
Jonathan Beyer	PSC - Legal
Quang D Nguyen	PSC
RICHARD G. RAFF	PSC - LEGAL
Tim Stout	Sterling Ventures
TODD WALTERS	STERLING VENTURES
Mike Kurtz	KIUC
Scott Straight	LG&E and KU
Dave Sinclair	LG&E/KU
John Voyles	LGE/KU
Gary Revlett	LGE/KU
Allyson Sturgeon	LGE/KU
KR Rossi	SKO for LG&E/KU
Bob Amsler II	PSC - F/A

Chris Whelan	PSC - FA
Mathew Barr	PSC - FA
Molly Katen	PSC Legal
Andrea Schroader	LGE/KU
Chuck Schram	LGE/KU
DOROTHY O'BRIEN	LGE-KU
Robert M. Conroy	LGE/KU
Meredith Needham	LGE/KU
Gerald A. Reynolds	LGE/KU
Mary Whitaker	PSC-FA
Mary Beth Purvis	PSC-FA
Nancy J. Vinsel	PSC - Legal

LG&E KU

PPL companies



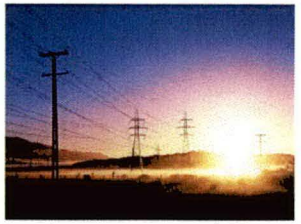


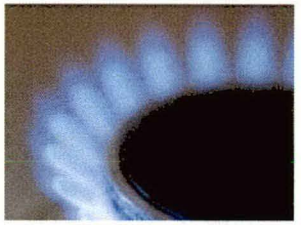
Informal Conference
Case No. 2015-00194

June 19, 2015

LG&E KU

PPL companies





Trimble County Landfill

June 19, 2015

Section 404 Permitting History

- December 2010 – LG&E/KU files original 404 permit application with the U.S. Army Corps of Engineers (USCOE).
- May 2, 2013 – DWM issues letter to LG&E/KU denying landfill permit referencing non-compliance with Cave Protection Act requirements.
- May 2013 – LG&E/KU begin reassessment of landfill permit applications.
- April 25, 2014 – LG&E/KU refiles permit application, including the Alternative Analysis, with the USCOE.
  - *Preliminary correspondence in July 2014 from USEPA to USCOE comments on LG&E/KU's 2014 CWA Section 404 Permit Application. USEPA's final correspondence to USCOE on August 7, 2014 suggests the Alternative Analysis is flawed and recommended additional off-site locations be evaluated.*

Section 404 Permitting History

- *December 2014 - LG&E/KU submitted an extensive supplement to the Alternative Analysis to the USCOE that supports the refiled Permit application. This analysis also demonstrates that construction of the on-site TC landfill continues to be the least environmentally damaging practicable alternative. 40 CFR 230.10(a)*

- *EPA letter February 12, 2015 to the U.S. Corps of Engineers states: "The EPA has reviewed this information, and ... we find that the information is generally responsive to the comments outlined in our comment letters."*

Section 404 Alternative Analysis Due Diligence – Showed Uncertainties

Sterling Ventures did not provide adequate assurance of required capacity.

- The Sterling Ventures ("Sterling") mine only had available mined-out space to contain approximately 5 million cubic yards of coal combustion residuals (CCRs).
- Sterling advised that its mining rate is variable (currently between 900,000 and 1.5 million tons annually) "depending on market conditions."
  - *Sterling suggested mitigating this issue through an LG&E/KU contract tied with purchasing limestone.*

Sterling Ventures did not provide adequate assurance of required capacity.

- A 37-year contract for CCR storage in the absence of competitive CCR storage market places LG&E/KU and the operation of Trimble County Generation at risk in the event of vendor performance.

- A long-term agreement that ties CCR storage capacity to the purchase of a commodity from the same vendor creates risk of uneconomic purchases.

Question about the Sterling option's viability in light of EPA's new CCR Rule. (May 26, 2015 email from EPA)

- The definition of "CCR Landfill" includes "an area of land or excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For the purpose of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of beneficial reuse." 80 Fed. Reg. at 21469 (April 17, 2015).

Question about the Sterling option's viability in light of EPA's new CCR Rule. (May 26, 2015 email from EPA)

- Sterling contends that placement of CCRs in its mine will constitute beneficial use of CCRs, rather than disposal subject to the full requirements of EPA's CCR Rule.

- The May 26, 2015 email from one EPA employee does not find that Sterling's proposed use would constitute beneficial use exempt from the CCR Rule. It merely states that it would be beneficial use if it meets the four requirements of the rule, but would be considered "disposal" subject to the CCR Rule if it fails to meet the requirements.

Question about the Sterling option's viability in light of EPA's new CCR Rule. (May 26, 2015 email from EPA)

- EPA's Preamble for the CCR Rule expressly states that "large-scale placement, akin to disposal, of CCR .... under the guise of 'beneficial use' – the beneficial use being the filling up of old quarries or gravel pits..." is not considered beneficial use under the CCR Rule. 80 Fed. Reg. at 21330 (April 17, 2015).

- EPA explained in a March 18, 2015 memorandum that the only mines excluded from the definition of CCR "landfill" are coal mines (which will be addressed by future rules).

Question about the Sterling option's viability in light of EPA's new CCR Rule. (May 26, 2015 email from EPA)

- The fact that Sterling has a Kentucky beneficial reuse permit does not establish that the proposal would be beneficial use under the CCR Rule because the new federal requirements are substantially different from those under the state program.

- Sterling's option does not appear to meet at least two prongs of the test – placement of CCRs would serve no functional benefit and it would not substitute for the use of a virgin material that would otherwise be utilized.

Question about the Sterling option's viability in light of EPA's new CCR Rule. (May 26, 2015 email from EPA)

- If subject to the rule as a new landfill, it is unclear that it would be technically feasible for the Sterling mine to comply with design, and operating requirements applicable to landfills, such as double liners with leachate collection. Certainly, the Sterling cost estimates do not take such costs into account or provide any assurance they could be met.

Sterling was unresponsive to basic requests for information used to prequalify vendors

- LG&E/KU's requested recent third-party audited financials for the company. Sterling stated that "Sterling is not willing to provide confidential business information in connection with quoting pricing for services."

- LG&E/KU requested Sterling describe the financial assurances provided to guarantee performance over the expected life of the contact. Sterling declined.
  - *Adequate financial assurance is critical in this instance due to the long duration of the project, the potential to disrupt Trimble operations in the event of default, and potential liability for LG&E/KU under CERCLA should environmental problems arise at the mine site.*

The Sterling option would result in substantial additional risk.

- The loading and unloading of nearly one million cubic yards of CCR annually to the Sterling site by truck would require a truck passing any given point on the public roads every 6-7 minutes for 35+ years.

- Barge hauling of CCRs is dependent on adequate barge hauling services and is subject to interruption. We address this risk for current limestone and coal deliveries through on-site storage capacity. On-site landfill capacity, designed to meet the CCR Rule, would be necessary to address the risk of interruptions of an off-site CCR management option.

The Sterling option was not the best environmental alternative in the 404 analysis.

- The Sterling option was one of 40+ alternatives evaluated under the analysis to identify the "least environmentally damaging practicable alternative" as required to obtain a Section 404 dredge and fill permit from the U.S. Army Corps of Engineers.

- The Section 404 analysis estimated the cost of CCR management at the Sterling mine site at $19.71 per ton, compared to $11.72 per ton for managing CCRs onsite in the Trimble landfill. (Sterling Ventures Complaint, Exhibit P, page 35 of 183)

The Sterling option was not the best environmental alternative in the 404 analysis.

- "Cost aside, LG&E does not believe it would be practicable to proceed with the Sterling Ventures alternative, given that long-term capacity cannot be assured, and there are concerns about existing and future regulatory limits on CCR placement below the water table. LG&E would be left without an ability to manage CCR if the Sterling Ventures site were to become unusable for any reason; or in the alternative LG&E would have to have a conventional duplicate site ready to implement." (Sterling Ventures Complaint, Exhibit P, page 36 of 183)






PPL companies

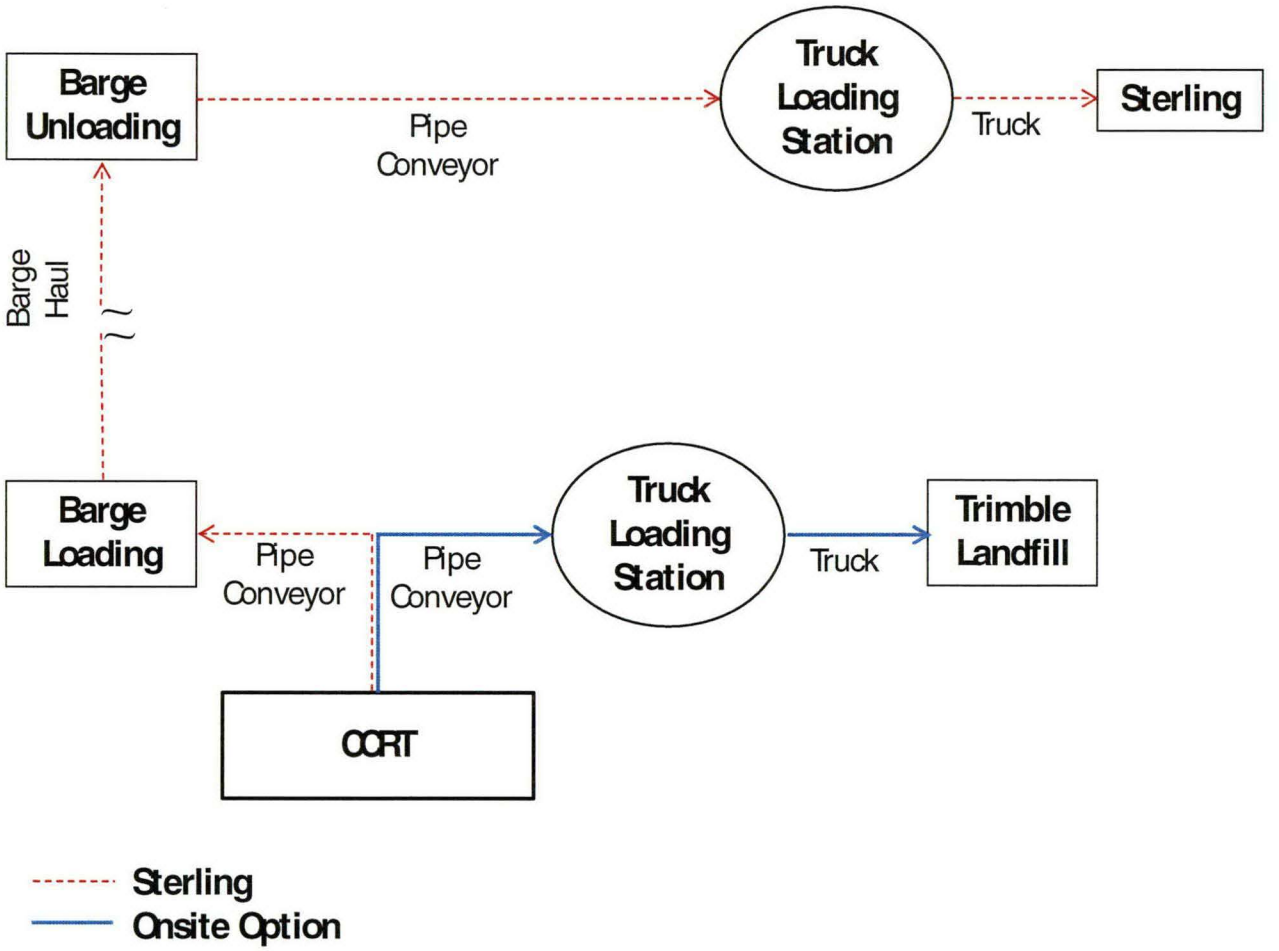
Evaluation of Trimble County Coal Combustion Residual Storage Options – 2015

June 19, 2015

Analysis assumptions favorable to Sterling alternative

- Sterling site will have required space for CCR
- Site will be compliant with CCR regulations
- Lowest cost transportation from Trimble County to Sterling would be via barge
  - *Requires additional capital expenditures of $189 million*
- No CCR storage constructed at Trimble County
- Same CCRT cost is required regardless of CCR storage location

CCR Transport and Storage



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Capital Cost Assumptions ($2014 millions)

Onsite Alternative		Sterling Alternative	
CCRT	172.1	CCRT	172.1
Pipe Conveyor	30.0	First Pipe Conveyor	30.0
Landfill Phase 1	135.3	Barge Loading/Unloading Facilities	43.0
Landfill Phase 2	79.5	Second Pipe Conveyor to Truck Loading	89.8
Landfill Phase 3	38.9	Site Preparation and Permitting	21.8
Landfill Phase 4	12.1	Haul Road	26.0
Intermediate & Final Soil Cover	22.9	Barge Purchase	8.5
Total	**490.8**	**Total**	**391.2**

- Sterling alternative does not include on-site storage to address risk of "all-off-site" storage alternative
- Alternative transportation methods will likely result in higher operating costs

Sterling's O&M Expenses are significantly higher

- Annual fixed O&M of $2.5 million is twice the on-site cost due to transportation
- Variable O&M of $15.42/ton is almost 8 times the on-site cost
  - *Two thirds of Sterling's variable O&M is their tipping fee of $10.15/ton*

Sterling alternative is not least cost

- Compared on-site storage to Sterling over a range of generation forecasts and beneficial reuse volumes
- PVRR of Sterling alternative is $156 - $217 million more expensive than continuing with onsite storage
- These results do not address risks associated with:
  - *No on-site CCR storage to mitigate interruptions in moving CCRs offsite*
  - *Site specific risks inherent in the Sterling alternative such as ability to comply with CCR rules and availability of future space*
- Both alternatives require construction of a CCRT system in order to dry and prepare the CCRs for storage

Continuing with on-site storage is the least cost solution

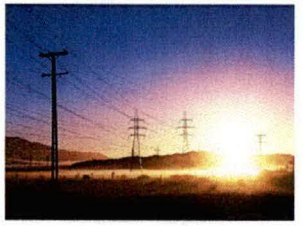
- On-site storage provides significant customer savings, while guaranteeing long-term CCR storage capacity
- On-site storage eliminates need for duplicate facilities to address risks associated with Sterling alternative

LG&E KU

PPL companies

Ghent Landfill

June 19, 2015



Ghent - History

- The KPSC issued the CPCN Order on December 23, 2009 in Case No. 2009-00197.
- November 4, 2010 Informal Conference with KPSC. Presented Phase I cost increases above conceptual estimates of the transport system. ($98M increase.)
- September, 2011 - received proposal from Sterling for gypsum placement in their mine. Costs were tied with limestone purchase, and did not include infrastructure component costs.

September 2011 Ghent Gypsum Proposal

- CCRT and Phase I of Ghent landfill was necessary in order to facilitate on-site storage or off-site opportunities that meet the CCR rule, and provides a backstop in the event beneficial reuse opportunities are not sustainable.

- The LG&E/KU evaluated the Sterling beneficial reuse proposal at the time it was presented.

- The LG&E/KU did a least cost analysis, and concluded that Phase 1 remained the least-cost and most feasible option.

Evaluation of Trimble County Coal Combustion Residual Storage Options

PPL companies

Generation Planning & Analysis
2015

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1 Executive Summary

The existing coal combustion residual ("CCR") storage facilities at the Trimble County Generating Station ("Trimble County Station") are nearing capacity. As a result, additional CCR storage capacity will be needed as early as 2018. To meet this need, the LG&E and KU (the "Companies") requested a permit to construct a new landfill in 2010. However, in 2013 the Kentucky Division of Waste Management denied the permit for the new landfill citing the Cave Protection Act and the existence of the "Wentworth Cave" within the footprint of the new landfill as the reason. In July and August 2014, the Companies received comments from the EPA regarding the alternatives analysis submitted to the U. S. Army Corps to support a Clean Water Act permit application for the redesigned landfill. Based on these comments, as an alternative to building the on-site landfill, the Companies evaluated an alternative to store CCRs produced by the Trimble County Station in depleted sections of an active underground limestone quarry owned by Sterling Ventures ("Sterling").

Based on information provided by Sterling, their quarry appears to have only about 5 million cubic yards of available capacity that can be used to store CCRs which is significantly less than the CCR production from the Trimble County Station over the next several decades. For purposes of this analysis, the Companies assumed that additional capacity would be created at the quarry (from mining limestone) at a rate that would exceed Trimble County Station's need for CCR storage capacity. As a result of this assumption, the Sterling alternative is assumed to completely eliminate the need for an onsite landfill for the purposes of this analysis.

It should also be noted that the Sterling site, as understood by the Companies, is an unlined quarry. Based on the Companies' understanding of EPA's CCR Rule, the Sterling site is not likely to be a permitted alternative for storing CCRs. However, for purposes of this analysis, the Companies' assumed that the Sterling site could be permitted to store all forms of CCRs produced by the Trimble County Station.

In reality, both the assumption that additional space will be created and that the site will be a legal long-term repository for CCRs would create significant risk for the Companies and their customers. While this analysis does not explicitly address either of these risks, a prudent long-term CCR storage plan would require some amount of on-site storage capability in order to avoid the potential for the need to curtail generation from the Trimble County Station.

The costs of the onsite and Sterling CCR storage alternatives are summarized in Table 1.[1] The total capital cost for the onsite alternative is $99.4 million higher than the Sterling alternative, but $53.8 million more capital is required by 2018 for the Sterling alternative than the onsite alternative. All capital ($391.2 million) for the Sterling alternative is required by 2018; for the onsite alternative, only the capital for the CCR treatment and transport system ("CCRT"), pipe conveyor, and first landfill phase ($337.4 million) is required by 2018. Compared to the onsite storage alternative, the material handling costs in the Sterling storage alternative are much higher. As a result, fixed and variable operating and maintenance costs ("O&M") are much higher for the Sterling alternative.

[1] Typically, the Companies present cost data based on its 75 percent ownership share of the Trimble County coal units, but this project is applicable to 100 percent of the Trimble County CCRs. Unless otherwise stated, all of the data in this analysis is for 100 percent of the project.

Table 1 – CCR Storage Costs ($2014)

	Onsite Alternative	Sterling Alternative	Difference (Onsite less Sterling)
Capital Costs ($M)			
Spent by 2018	337.4	391.2	(53.8)
Spent after 2018	153.4	-	153.4
Total	490.8	391.2	99.4
Fixed O&M ($/Year)	1,210,000	2,525,000	(1,315,000)
Variable O&M ($/Ton)	1.59 – 1.98	15.42	(13.83) – (13.44)

The Companies evaluated the onsite and Sterling alternatives over six scenarios with annual CCR storage requirements ranging from 350 thousand cubic yards per year to 900 thousand cubic yards per year. In all six scenarios, the onsite storage alternative was lower cost than the Sterling alternative. The difference in present value of revenue requirements ("PVRR") between the onsite and Sterling alternatives ranged from $156 million to $217 million. This result is driven by several factors:

1. In all scenarios (and particularly in scenarios with higher CCR storage requirements), variable O&M costs for the Sterling alternative are significantly higher.
2. Due to the need to operate barge loading and unloading facilities, fixed O&M costs for the Sterling alternative are also higher.
3. The onsite alternative has higher capital costs overall, but more capital is required by 2018 in the Sterling alternative. This fact minimizes the Sterling alternative's capital cost advantage.

Without the ability to operate Trimble County Station units 1 and 2 beyond 2018, the Companies would need to replace 932 MW of their baseload capacity and associated energy from two of the lowest cost generating units in the Companies' system.

Based on the Companies' analysis, continuing with the onsite CCR storage alternative remains the least-cost alternative for the Trimble County Station compared to the Sterling alternative. In all scenarios considered, continuing with the onsite alternative is the least-cost alternative. Furthermore, these results do not address the risks associated with having no onsite CCR storage as well as the site specific risks inherent in the Sterling alternative. A prudent CCR plan for the Trimble County Station would address those risks which further supports continuing with the onsite storage project. Finally, regardless of which alternative is selected, the Companies will need to construct a CCRT system in order to dry and prepare the CCR's for storage.

2 Background

The Trimble County Station has two coal-fired generating units with a combined generating capacity of 1,260 megawatts. The station produces around 8 million MWh of energy annually (including IMPA and IMEA's share) and provides about 17 percent of the energy needs of the Companies' customers. The station consumes around 3.5 million tons of coal annually and produces approximately 700,000 to 900,000 cubic yards ("CY") of CCRs.[2] Approximately 27 percent of the station's CCRs were beneficially reused by the concrete, cement, and wallboard industries. Any CCRs not delivered to beneficial reuse markets are currently stored in onsite ponds.

In 2010, the Companies requested a permit to construct a new landfill. However, in 2013 the Kentucky Division of Waste Management denied the permit for the new landfill citing the Cave Protection Act and the existence of one karst feature known as the "Wentworth Cave" within the footprint of the new landfill as the reason. The Companies worked with GAI Consultants ("GAI") to redesign the landfill to exclude the karst feature. The initial siting study identified several potential alternatives based on combinations of a number of variables, including storage, transport methods, and site locations. The alternative that was chosen is more expensive than the 2009 design due in part to the modified footprint but also to increased cost estimates for the CCR treatment and transport system ("CCRT").[3]

In July and August 2014, the Companies received comments from the EPA regarding the alternatives analysis submitted to the U. S. Army Corps of Engineers to support a Clean Water Act permit application for the redesigned landfill. Based on these comments, as an alternative to building the on-site landfill, the Companies evaluated an alternative to store CCRs produced by the Trimble County Station in depleted sections of an active underground limestone quarry owned by Sterling. The Sterling quarry is located in Gallatin County Kentucky near the Ohio River. This analysis compares the costs of the redesigned onsite landfill alternative to the cost of the Sterling alternative. The Sterling alternative consists of a tipping fee associated with disposing of CCRs at Sterling's facility plus the necessary capital and O&M costs to move CCRs from the Trimble County Station to the Sterling site. The Companies developed estimates for the infrastructure needed for handling and transporting the CCRs to the Sterling site.

3 Summary of Alternatives

Figure 1 contains a diagram of the CCR storage alternatives considered in this analysis. The least-cost onsite alternative consists of a CCRT, a pipe conveyor, a truck loading station, and a landfill. The CCRT conditions and prepares the CCRs to be transported by the pipe conveyor to the truck loading station where the CCRs are loaded into trucks. Then, trucks haul and place the CCRs in the landfill. The landfill will be constructed in four phases; the total storage capacity for all four phases is 33.4 million CY. The truck hauling distance from the truck loading station to the working face of the landfill varies between 0.5 and 1.25 miles depending on the landfill phase.

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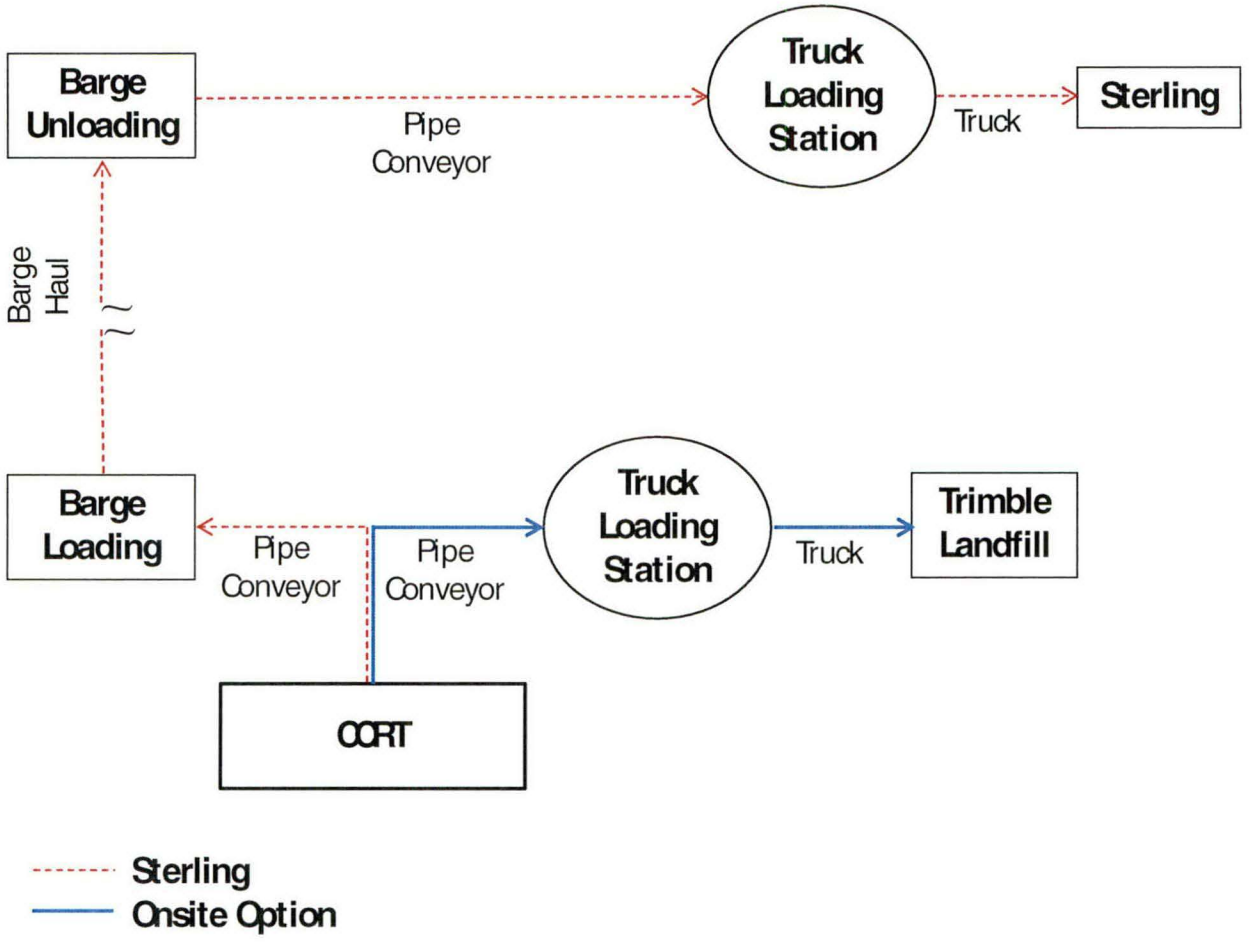
[2] CCRs are comprised of approximately 8% bottom ash, 30% fly ash, and 62% gypsum. The weighted average of CCR production results in a 1.2 tons per cubic yard average conversion factor for dry material.

[3] The increased cost estimates for the CCRT are based on actual costs for the CCRT that was recently installed at the Companies' Ghent Generating Station.

Figure 1 – Onsite and Sterling CCR Storage Alternatives



The Sterling alternative consists of the same CCRT, two pipe conveyors, barge loading and unloading facilities, a truck loading station, and the Sterling quarry. The first pipe conveyor transports the CCRs to the barge loading facility where the CCRs are loaded onto dedicated barges.[4] From there, the CCRs are barged approximately 47 miles up the Ohio River to a barge unloading facility located near the Sterling quarry. After the barges are unloaded, a second pipe conveyor, which is approximately three times longer than the first, transports the CCRs to a truck loading station where the CCRs are loaded onto trucks. Then, the trucks haul the CCRs to the quarry. The truck hauling distance is assumed to be 0.5 miles. Alternatives to the Companies' design for a least cost method of delivering the CCRs to the Sterling site that do not include the pipe conveyor systems would result in higher O&M costs associated with transporting the CCRs.

Based on information provided by Sterling, their quarry appears to have only about 5 million cubic yards of available capacity that can be used to store CCRs which is significantly less than the CCR production from the Trimble County Station over the next several decades. For purposes of this analysis, the Companies assumed that additional capacity would be created at the quarry (from mining limestone) at

[4] The length of the first pipe conveyor in the offsite option is assumed to be the same as the length of the pipe conveyor in the onsite option.

a rate that would exceed Trimble County Station's need for CCR storage capacity. As a result of this assumption, the Sterling alternative is assumed to completely eliminate the need for an onsite landfill for the purposes of this analysis.

It should also be noted that the Sterling site, as understood by the Companies, is an unlined quarry. Based on the Companies' understanding of EPA's CCR Rule, the Sterling site is not likely to be a permitted alternative for storing CCRs. However, for purposes of this analysis, the Companies' assumed that the Sterling site could be permitted to store all forms of CCRs produced by the Trimble County Station.

In reality, both the assumption that additional space will be created and that the site will be a legal long-term repository for CCRs would create significant risk for the Companies and their customers. While this analysis does not explicitly address either of these risks, a prudent long-term CCR storage plan would require some amount of on-site storage capability in order to avoid the potential for the need to curtail generation from the Trimble County Station.

3.1 Capital Costs

Table 2 summarizes the capital costs for the onsite and Sterling alternatives. The total capital cost for the onsite alternative is $99.4 million higher than the Sterling alternative, but $53.8 million more capital is required by 2018 for the Sterling alternative than the onsite alternative. All capital ($391.2 million) for the Sterling alternative is required by 2018; for the onsite alternative, only the capital for the CCRT, pipe conveyor, and first landfill phase ($337.4 million) is required by 2018. The capital cost for the CCRT and first pipe conveyor is the same for both alternatives. Based on its length, the second pipe conveyor in the Sterling alternative costs three times more than the pipe conveyor in the onsite alternative; this cost estimate is conservative since it does not account for the more rugged terrain through which the Sterling conveyor must pass. In addition, the Sterling alternative requires ten dedicated barges. With the exception of the cost of the barges, all capital cost estimates for both alternatives were developed by GAI. Not included in the Sterling alternative is the cost of a contingency plan for storing CCRs in the event that Sterling is unable to accept the material. A potential contingency plan would involve constructing Phase 1 of the landfill for the Sterling alternative ($135.3 million in the onsite alternative in Table 2).

Table 2 – Capital Cost ($2014, $M)

Onsite Alternative		Sterling Alternative	
CCRT	172.1	CCRT	172.1
Pipe Conveyor[5]	30.0	First Pipe Conveyor[5]	30.0
Landfill Phase 1[6]	135.3	Barge Loading/Unloading Facilities	43.0
Landfill Phase 2	79.5	Second Pipe Conveyor to Truck Loading	89.8
Landfill Phase 3	38.9	Site Preparation and Permitting	21.8
Landfill Phase 4	12.1	Haul Road	26.0
Intermediate & Final Soil Cover[7]	22.9	Barge Purchase	8.5
Total	**490.8**	**Total**	**391.2**

3.2 Fixed Operating and Maintenance Costs

Table 3 summarizes the annual fixed operating and maintenance costs ("O&M") for the onsite and Sterling alternatives. Compared to the onsite alternative, the annual fixed O&M for the Sterling alternative is more than $1 million higher. The fixed O&M estimates for the onsite alternative were developed by GAI. For the Sterling alternative, GAI developed the estimated road maintenance and dust control costs; the Companies developed the fleeting and barge operating costs based on existing contracts for similar services. The barge fleeting cost, which is the cost to secure and position the barges while loading and unloading, is the majority of the annual fixed O&M for the Sterling alternative. In addition to these costs, fixed O&M for the onsite alternative includes the cost of covering and closing landfill phases. Over the life of the project, these costs are less than $2 million in 2014 dollars.

Table 3 – Annual Fixed Operating and Maintenance Costs ($2014, $/year)

Onsite Alternative		Sterling Alternative	
Road Maintenance and Dust Control	420,000	Road Maintenance and Dust Control	390,000
Leachate System O&M	330,000	Fleeting for Barge Loading	485,000
Landfill Maintenance	460,000	Fleeting for Barge Unloading	970,000
		Barge Operating Cost	680,000
Total	**1,210,000**	**Total**	**2,525,000**

3.3 Variable Operating and Maintenance Costs

Table 4 summarizes the variable O&M for the onsite and Sterling alternatives. Compared to the onsite alternative, variable O&M for the Sterling alternative is approximately $14/ton higher. The variable O&M for the pipe conveyor and truck hauling is the same for both alternatives. The barge loading and unloading cost estimates are based on the Companies' experience operating their existing barge loading facility at the Trimble County Station. The CCRs are in a paste-like form that result in more difficult handling that other solids. Due to this consistency of the CCRs, unloading barges is assumed to be 50% more costly than loading barges. The truck hauling cost estimates are based on KU's contract for similar services at the Ghent Generating Station. Sterling Ventures provided the estimate for the tipping fee, which includes the cost of transporting the CCR by off-road trucks into the quarry.

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[5] The capital cost for the CCRT includes the cost for a haul road which is needed in case the pipe conveyor is out of service.

[6] The Landfill Phase 1 cost includes site preparation and permitting costs as well as the cost of the haul road from the truck loading station to the landfill.

[7] The capital for intermediate and final soil cover are incurred as the phases are filled.

Table 4 – Variable Operating and Maintenance Cost ($2014, $/Ton)[8]

Onsite Alternative		Sterling Alternative	
Pipe Conveyor ("PC") Operating Costs	0.04	First Pipe Conveyor	0.04
Truck Hauling to Landfill (0.5 Miles)	0.99	Barge Loading	0.68
Truck Hauling to Landfill (0.75 Miles)	1.13	Barge Transport	2.50
Truck Hauling to Landfill (1.25 Miles)	1.38	Barge Unloading	1.02
CCR Placement & Compaction at Landfill	0.56	Second Pipe Conveyor	0.04
		Truck Hauling to Mineshaft (0.5 Miles)	0.99
		Sterling Tipping Fee	10.15
Total	1.59 – 1.98	Total	15.42

3.4 Other Inputs

Table 5 lists the other input assumptions for this analysis.

Table 5 – Other Inputs

Input	Value
Analysis Period	2015-2044
Return on Equity	10.25%
Cost of Debt	3.53%
Capital Structure	
Debt	47.4%
Equity	52.6%
Tax Rate	38.9%
Revenue Requirement Discount Rate	6.41%
O&M Cost Escalation Rate	3%
Capital Cost Escalation Rate	4%

4 Analysis of Alternatives

The need for additional CCR storage capacity varies with the level of coal generation at the Trimble County Station and the amount of CCRs that are beneficially reused. As coal generation increases or as beneficial reuse volumes decrease, the need for additional storage capacity increases. To capture the full range of possible CCR storage needs, three coal generation cases were considered: base, high, and low. The base generation case is taken from the Companies' 2015 Business Plan. The average annual capacity factor for the Trimble County coal units in the base generation scenario is 73%. In the high generation case, the average capacity factor is 80%. In the low generation case, the average capacity factor is 50%. The low generation case is an extreme scenario. The Trimble County coal units are two of the Companies' most efficient coal units; a 50% capacity factor for the Trimble County coal units implies that other coal units in the Companies' generating portfolio are operating at even lower capacity factors.

Because the Companies cannot reasonably assume a continuous and constant level of beneficial reuse moving forward, the analysis considered two beneficial reuse cases in addition to the generation cases. In the first case, no CCR volumes are beneficially reused. In the second case, beneficial reuse continues

[8] On average, to convert a $/ton of CCR to $/CY, divide by 1.2.

at current levels (approximately 250,000 CY/year). In total, the analysis considered six CCR storage scenarios (three generation cases times two beneficial reuse cases; see Table 6). With these scenarios, the analysis considers a wide range of annual CCR storage requirements. This is important for properly evaluating the onsite and Sterling storage alternatives.

Table 6 – CCR Generation and Beneficial Reuse Scenarios

Scenarios	Avg. Capacity Factor: Trimble County Coal Units	Beneficial Reuse (000s CY)	Annual CCR Storage (000s CY)
High Generation; No Beneficial Reuse	80%	0	900
High Generation; Beneficial Reuse	80%	250	650
Base Generation; No Beneficial Reuse	73%	0	725
Base Generation; Beneficial Reuse	73%	250	475
Low Generation; No Beneficial Reuse	50%	0	600
Low Generation; Beneficial Reuse	50%	250	350

Annual revenue requirements were computed for the onsite and Sterling storage alternatives over a 30-year analysis period for each of the six generation-beneficial reuse scenarios. For the onsite storage alternative, the annual CCR storage requirement impacts the timing of second, third, and fourth landfill phases. For each of the scenarios considered, Table 7 lists the in-service year for each landfill phase, the total nominal capital cost for the project, and the life of the landfill.

Table 7 – Timing of Onsite Landfill Phases

Scenarios	No Beneficial Reuse			With Beneficial Reuse		
	High Generation	Base Generation	Low Generation	High Generation	Base Generation	Low Generation
Phase 1	2018	2018	2018	2018	2018	2018
Phase 2	2024	2026	2028	2027	2029	2033
Phase 3	2032	2036	2039	2035	2040	2045
Phase 4	2044	2050	2057	2047	2055	2063
Final Cover	2055	2064	2074	2058	2068	2078
Total Project Nominal Capital Cost ($M)[9]	663	689	782	701	773	879
Landfill Life (years)	37	46	56	40	50	60

The results of the analysis are summarized in Table 8. Over all scenarios, the onsite storage alternative is lower cost than the Sterling alternative. The difference in present value of revenue requirements ("PVRR") between the onsite and Sterling alternatives ranges from $156 million to $217 million. The difference in levelized cost between the two options ranges from $14/ton to $22/ton.

[9] The total nominal capital cost excludes $26.4 million that has been spent on the project through 2/28/2014.

Table 8 – Analysis Results, All Scenarios (30-year study period)[10]

Scenarios	CCRs Stored (MCY)	Present Value Revenue Requirement ($2014, 2015-2044, $M)			Levelized Cost ($/Ton Stored)		
		Onsite	Sterling	Diff (Onsite less Sterling)	Onsite	Sterling	Diff (Onsite less Sterling)
High Generation; No Beneficial Reuse	32.7	637	854	(217)	42	57	(14)
High Generation; Beneficial Reuse	28.2	614	811	(197)	50	66	(16)
Base Generation; No Beneficial Reuse	26.0	614	795	(181)	51	66	(15)
Base Generation; Beneficial Reuse	21.5	589	752	(164)	64	82	(18)
Low Generation; No Beneficial Reuse	21.3	595	754	(159)	61	77	(16)
Low Generation; Beneficial Reuse	16.8	556	711	(156)	79	101	(22)

Table 9 lists the PVRR for the onsite and Sterling alternatives by cost item. Several factors drive the results of this analysis:

1. In all scenarios (and particularly in scenarios with higher CCR storage requirements), variable O&M costs for the Sterling alternative are significantly higher.
2. Due to the need to operate barge loading and unloading facilities, fixed O&M costs for the Sterling alternative are also higher.
3. The onsite alternative has higher capital costs overall on a PVRR basis, but this is more than offset by the lower fixed and variable O&M costs. Furthermore, inclusion of the capital ($135 million in 2014 dollars) associated with a potential contingency storage plan for the Sterling alternative would result in the Sterling alternative's capital costs exceeding those of the onsite alternative.

[10] To highlight the cost differences between the onsite and offsite alternatives, the cost of beneficial reuse projects are not reflected in these results. Beneficial reuse costs are the same for both alternatives.

Table 9 – PVRR by Cost Item[11]

Scenarios	Present Value Revenue Requirement ($2014, 2015-2044, $M)			
	Capital Cost	Fixed O&M	Variable O&M	Total Cost
Onsite Alternative				
High Generation; No Beneficial Reuse	580	23	34	637
High Generation; Beneficial Reuse	563	23	29	614
Base Generation; No Beneficial Reuse	564	23	27	614
Base Generation; Beneficial Reuse	544	23	22	589
Low Generation; No Beneficial Reuse	550	23	22	595
Low Generation; Beneficial Reuse	516	23	17	556
Sterling Alternative				
High Generation; No Beneficial Reuse	523	44	287	854
High Generation; Beneficial Reuse	523	44	244	811
Base Generation; No Beneficial Reuse	523	44	228	795
Base Generation; Beneficial Reuse	523	44	185	752
Low Generation; No Beneficial Reuse	523	44	187	754
Low Generation; Beneficial Reuse	523	44	144	711
Difference (Onsite Less Sterling)				
High Generation; No Beneficial Reuse	57	(21)	(253)	(217)
High Generation; Beneficial Reuse	40	(21)	(215)	(197)
Base Generation; No Beneficial Reuse	41	(21)	(201)	(181)
Base Generation; Beneficial Reuse	21	(21)	(163)	(164)
Low Generation; No Beneficial Reuse	24	(21)	(165)	(159)
Low Generation; Beneficial Reuse	(7)	(21)	(127)	(156)

5 Conclusion

Based on the Companies' analysis, continuing with the onsite CCR storage alternative remains the least-cost alternative for the Trimble County Station compared to the Sterling alternative. In all scenarios considered, continuing with the onsite alternative is the least-cost alternative. Furthermore, these results do not address the risks associated with having no onsite CCR storage as well as the site specific risks inherent in the Sterling alternative. A prudent CCR plan for the Trimble County Station would address those risks which further supports continuing with the onsite storage project. Finally, regardless of which alternative is selected, the Companies will need to construct a CCRT system in order to dry and prepare the CCR's for storage.

[11] To highlight the cost differences between the onsite and offsite alternatives, the cost of beneficial reuse projects are not reflected in these results. Beneficial reuse costs are the same for both alternatives.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 12 2015

Ms. Lee Anne Devine
Chief
Regulatory Branch
Louisville District Corps of Engineers
CELRL-OP-FS, Room 752
P.O. Box 59
Louisville, Kentucky 40201-0059

Subject: Louisville Gas & Electric Company
Coal Combustion Residuals Landfill, Trimble County, Kentucky
LRL-2010-711

Dear Ms. Devine:

The U.S. Environmental Protection Agency is in receipt of information submitted by the Louisville Gas & Electric Company (LG&E) on December 26, 2014, titled "Supplement to Alternatives Analysis Report" for the above referenced project. This information was submitted in response to the EPA comment letters dated July 11, 2014, and August 7, 2014, pursuant to Part IV, paragraphs 3(a) and 3(b), respectively, of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement (MOA) between the EPA and the Department of the Army.

The EPA has reviewed this information, and although we remain concerned with the magnitude of proposed impacts to jurisdictional waters of the United States, we find that the information is generally responsive to the comments outlined in our comment letters. We look forward to the receipt of the Louisville District Corps of Engineers' *Notice of Intent to Proceed* consistent with Part IV, paragraph 3(c) of the above referenced MOA.

If you have any questions, please do not hesitate to call me at (404) 562-9243, or Mr. Eric Somerville at (706) 355-8514.

Sincerely,

Thomas McGill
Chief
Ocean, Wetlands & Streams Protection Branch

cc: Mr. Lee Andrews, U.S. Fish and Wildlife Service
Mr. Peter Goodman, Kentucky Division of Water

STERLING VENTURES

John Walters <johnwalters@sterlingventures.com>

RE: LG&E Trimble County Landfill

1 message

Souders, Steve <Souders.Steve@epa.gov> Tue, May 26, 2015 at 1:52 PM
To: John Walters <johnwalters@sterlingventures.com>
Cc: "Somerville, Eric" <Somerville.Eric@epa.gov>

John,

Footnote #13 on page 14 of the action filed by LG&E with the Kentucky Public Service Commission includes the following sentence which is not necessarily accurate.

"The Sterling Ventures proposal did not take into account the final CCR Rule requirements pertaining to new CCR landfills, which Sterling Ventures' limestone mine would be if used to store CCR beginning after October 2015. See 40 CFR 257.53."

If the use of CCR in a limestone mine meets the beneficial use criteria given in the definition of beneficial use of CCR, then the use is a beneficial use and not disposal. The criteria that must be met are:

(1) The CCR must provide a functional benefit;

(2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;

(3) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

(4) When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

However, if the use does not meet these criteria, the use is disposal and subject to the CCR rule. Beneficial use and the beneficial use criteria are discussed in detail in the preamble to the CCR rule beginning at 80 FR 21347.

I hope this helps. Please let me know if you have questions or need additional information.

Regards,

Steve Souders

FEDERAL REGISTER

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Part II

Environmental Protection Agency

40 CFR Parts 257 and 261
Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule

regulation under either subtitle C or subtitle D of RCRA.

While there can be some risks associated with unencapsulated uses—for example, the placement of unencapsulated CCR on the land, such as in large scale fill operations or in agricultural uses, depending on the specific site conditions—in general the amounts and, in some cases, the manner in which they are used are very different than land disposal. For example, agricultural uses involve the placement of inches rather than tons of CCR, and placement of CCR in a thin layer rather than mounded in a single concentrated location. In addition, these uses are subject to engineering specifications and materials requirements, which will limit the ultimate amount of material placed on the land.

EPA recognizes that several proven damage cases involving the large-scale placement, akin to disposal, of CCR have occurred under the guise of "beneficial use"— the "beneficial" use being the filling up of old quarries or gravel pits, or the re-grading of landscape with large quantities of CCR. EPA did not consider this type of use as a "beneficial" use in its May 2000 Regulatory Determination, and still does not consider this type of use to be covered by the exclusion. Therefore, the final rule explicitly removes these types of uses from the category of beneficial use, and from this Regulatory Determination. As discussed in the next section of this preamble, EPA has adopted criteria in the final rule to ensure that inappropriate uses that effectively are disposal will be regulated as disposal. The final rule expressly defines the placement of CCR in sand and gravel pits or quarries as disposal in a landfill. In addition, the final rule provides that the use of large volumes of CCR in restructuring landscape that does not meet specific criteria will constitute disposal.

While EPA has not definitively concluded that all unencapsulated beneficial uses are "safe," based on the current record for this rulemaking, EPA is unable to point to evidence demonstrating that the unencapsulated uses subject to this Determination warrant federal regulation. While the absence of demonstrated harm in this instance is not proof of safety, neither is the lack of information proof of risk.[35]

In this regard, EPA notes that many states have developed beneficial use programs that allow the use of CCR, provided they are demonstrated to be non-hazardous materials; and many require a site specific assessment before authorizing placement on the land of large amounts of unencapsulated CCR. For example, Wisconsin's Department of Natural Resources has developed a regulation (NR 538 Wis. Adm. Code), which includes a five-category system to allow for the beneficial use of industrial by-products, including coal ash, provided they meet the specified criteria. In addition, the ASTSWMO 2006 Beneficial Use Survey Report states that a total of 34 of the 40 reporting states, or 85 percent, indicated they had either formal or informal decision-making processes or beneficial use programs relating to the use of solid wastes. (*http://www.astswmo.org/Files/Policies_and_Publications/Solid_Waste/2007BUSurveyReport11-30-07.pdf*) [36] Because EPA has not identified significant risks associated with the beneficial uses covered by this Regulatory Determination, the adequacy of these state programs does not factor into EPA's Determination. Nevertheless, to the extent that that these materials do have the potential to pose risk at an individual site, the fact that many states exercise regulatory oversight of these materials provides an additional level of assurance.

Finally, EPA does not wish to inhibit or eliminate the measurable environmental and economic benefits derived from the use of this valuable material given the current lack of evidence affirmatively demonstrating an environmental or health risk. Consequently, EPA is confident that the combination of the final rule, EPA guidance, current industrial standards and practices, and in many cases, state regulatory oversight is sufficient to address concerns associated with the beneficial uses to which this Determination applies.

V. Development of the Final Rule—RCRA Subtitle D Regulatory Approach

As previously discussed in Unit II of this document, the authority to develop and promulgate the national minimum criteria governing the disposal of CCR in landfills and surface impoundments is found under the provisions of sections 1008(a), 4004, and 4005(a) of RCRA (*i.e.*, subtitle D of RCRA). These authorities, however, do not provide EPA with the ability to issue permits, require states to issue permits, approve state programs to operate in lieu of the federal program, or to enforce any of the requirements addressing the disposal of CCR. Consequently, EPA designed the proposed RCRA subtitle D option to ensure that the requirements will effectively protect human health and the environment within those limitations. The final rule establishes self-implementing requirements—primarily performance standards—that owners or operators of regulated units can implement without any interaction with regulatory officials.

In developing the subtitle D option for the proposal, EPA considered a number of existing programs as relevant models. EPA drew most heavily on the existing 40 CFR part 258 program applicable to MSWLFs. While this program does not address CCR disposal in surface impoundments, it provided EPA with a general regulatory framework that addressed all aspects of disposal in certain land-based units. Given the Agency's expansive history and experience with these requirements, EPA concluded that the part 258 criteria with certain modifications for other land-based disposal units (*i.e.*, surface impoundments) represented a reasonable balance between ensuring the protection of human health and the environment from the risk of CCR disposal and the absence of any regulatory oversight. (See 75 FR 35192–35195.)

EPA also considered that many of the technical requirements developed to specifically address the risks from the disposal of CCR as part of the subtitle C alternative would be equally justified under a RCRA subtitle D regulatory regime. The factual record—*i.e.*, the risk analysis and the damage cases—supporting such requirements was the same, irrespective of the statutory authority under which the Agency was operating. Thus, several of the provisions under RCRA subtitle D either corresponded to the proposal under RCRA subtitle C, or were modeled after the existing subtitle C requirements; for example, EPA proposed the same MSHA-based structural stability standards for surface impoundments under the subtitle C and subtitle D options. However, because there is no corresponding guaranteed permit mechanism under the RCRA subtitle D requirements, EPA also considered the 40 CFR part 265 interim status requirements for hazardous waste facilities, which were designed to operate in the absence of a permit. These requirements were particularly

[35] The Agency is currently developing a Framework to address the risks associated with the beneficial use of unencapsulated materials. This Framework is expected to be finalized in 2015. See Unit VI of this document for more information.

[36] EPA has worked with the states to support the development of a national database on state beneficial use determinations. Information on the beneficial use determination database can be found on the Northeast Waste Management Officials' Association (NEWMOA) Web site at *http://www.newmoa.org/solidwaste/bud.cfm.* This database helps states share information on beneficial use decisions providing for more consistent and informed decisions.

619 F. Supp. 162, 200 (D. Mo. 1985) (" 'disposal' occurs. . .when [wastes] migrate from their initial location"). See also S. Rep. 98–284, p 58 (98th Cong. 1st Sess.) ("The Environmental Protection Agency and the Department of Justice have used the equitable authority and [sic] granted in section 7003 to seek court orders directing those persons whose past or present acts have contributed to or are contributing to the existence of an imminent and substantial endangerment to abate such conditions. This has been an intended use of the section 7003 since 1976. . . . An [sic] evidenced by the definition of 'disposal' in section 1004(3), which includes the leaking of hazardous wastes, section 7003 has always provided the authority to require the abatement of present conditions of endangerment resulting from past disposal practices, whether intentional or unintentional.").

While EPA continues to maintain that the statutory definition of disposal does in fact authorize regulation of inactive CCR surface impoundments, this is not the sole basis for that authority. Under section 1008(a)(3), EPA is authorized to establish criteria governing solid waste management, which includes the "storage" of solid waste. 42 U.S.C. 6904(28) and 6908(a)(3). RCRA's definition of "storage" is limited to hazardous waste; under subtitle D, therefore, the definition Congress intended was the dictionary definition, which incontrovertibly covers the activities associated with continuing to maintain CCR in inactive surface impoundments. For example, Merriam Webster defines "storage" as "the state of being kept in a place when not being used" and "the act of putting something that is not being used in a place where it is available, where it can be kept safely, etc."

Finally, consistent with the proposed rule and the final Regulatory Determination in Unit IV.B of this document, the final rule does not apply to CCR that is beneficially used.

6. Beneficial Use

The proposed rule generally distinguished between the disposal of CCR and the beneficial use of CCR. Disposal activities would be subject to regulation under one of two alternative regulatory schemes. But under either alternative, beneficial use would remain Bevill exempt and would not be subject to regulation. The proposal identified specific criteria that would be used to distinguish between legitimate beneficial uses of CCR and the disposal of CCR. These criteria were largely drawn from the approach contained in the May 2000 Bevill Regulatory Determination. The criteria were:

—The material used must provide a functional benefit. For example, CCR in concrete increases the durability of concrete—and is more effective in combating degradation from salt water; synthetic gypsum serves exactly the same function in wallboard as mined gypsum, and meets all commercial specifications; CCR as a soil amendment adjusts the pH of soil to promote plant growth.

—The material substitutes for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction. For example, the use of FGD gypsum in the manufacture of wallboard (drywall) decreases the need to mine natural gypsum, thereby conserving the natural resource and conserving energy that otherwise would be needed to mine natural gypsum; the use of fly ash in lieu of Portland cement reduces the need for cement. CCR used in road bed replace quarried aggregate or other industrial materials.

—Where relevant product specifications or regulatory standards are available, the materials meet those specifications, and where such specifications or standards have not been established, they are not being used in excess quantities. For example, when CCR is used as a commercial product, the amount of CCR used is controlled by product specifications, or the demands of the user. Fly ash used as a stabilized base course in highway construction is part of many engineering considerations, such as the ASTM C 593 test for compaction, the ASTM D 560 freezing and thawing test, and a seven day compressive strength above 2760 kPa (400 psi). If excessive volumes of CCR are used—*i.e.,* greater than were necessary for a specific project,—that could be grounds for a determination that the use is not beneficial, but rather is being disposed of. 75 FR 35162–35163.

EPA explained that in the case of agricultural uses, CCR would be expected to meet appropriate standards, constituent levels, prescribed total loads, application rates, etc. EPA has developed specific standards governing agricultural application of biosolids. While the management scenarios differ between biosludge application and the use of CCR as soil amendments, EPA stated that the Agency would consider application of CCR for agriculture uses not to be a legitimate beneficial use if they occurred at constituent levels or loading rates greater than EPA's biosolids regulations allow. (75 FR 35162–35163, June 21, 2010)

EPA proposed to codify these criteria in the term, "beneficial use of coal combustion products (CCPs)." This definition stated that the beneficial use of CCPs was the use of CCPs that provides a functional benefit; replaces the use of an alternative material, conserving natural resources that would otherwise need to be obtained through practices such as extraction; and meets relevant product specifications and regulatory standards (where these are available). CCPs that are used in excess quantities (*e.g.,* the field-applications of FGD gypsum in amounts that exceed scientifically-supported quantities required for enhancing soil properties and/or crop yields), placed as fill in sand and gravel pits, or used in large scale fill projects, such as restructuring the landscape, are excluded from this definition. (75 FR 35129–35130, June 21, 2010).

Commenters generally supported the criteria in the proposal but raised concern that the criteria lacked specificity; some commenters stated that the criteria were those that states already considered in doing their beneficial use determination. Commenters also suggested the use of a "no toxics" provision and others suggested that the criteria include a requirement that "environmental benefits" be achieved. A more general comment raised by several commenters was that the proposed criteria failed to establish any standard that ensured protection of human health and the environment. Finally, one commenter raised concern that EPA's approach to beneficial use, and particularly to large scale fill operations, inappropriately assumed that these operations constituted the disposal of solid waste, which, the commenter claimed was inconsistent with a series of judicial decisions.

There are generally three critical issues in determining whether a material is regulated under RCRA subtitle D: whether the material is a "solid waste," whether the activity constitutes "disposal," and whether regulation of the disposal is warranted. Although there can be some overlap between these issues in that the same facts may be relevant to each of them, understanding the distinction between them is critical to understanding the final approach to the beneficial use of CCR adopted in this rulemaking.

In order to be subject to RCRA, the material must be a solid waste. The statute defines a solid waste as "any garbage, refuse . . . and other discarded material. . . ." 42 U.S.C. 6903(27). As EPA noted in the proposed rule, for some beneficial uses, CCR is a raw

(h) This subpart does not apply to CCR placement at active or abandoned underground or surface coal mines.

(i) This subpart does not apply to municipal solid waste landfills that receive CCR.

§ 257.51 Effective date of this subpart.

The requirements of this subpart take effect on October 19, 2015.

§ 257.52 Applicability of other regulations.

(a) Compliance with the requirements of this subpart does not affect the need for the owner or operator of a CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit to comply with all other applicable federal, state, tribal, or local laws or other requirements.

(b) Any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit continues to be subject to the requirements in §§ 257.3–1, 257.3–2, and 257.3–3.

§ 257.53 Definitions.

The following definitions apply to this subpart. Terms not defined in this section have the meaning given by RCRA.

Acre foot means the volume of one acre of surface area to a depth of one foot.

Active facility or *active electric utilities or independent power producers* means any facility subject to the requirements of this subpart that is in operation on October 14, 2015. An electric utility or independent power producer is in operation if it is generating electricity that is provided to electric power transmission systems or to electric power distribution systems on or after October 14, 2015. An off-site disposal facility is in operation if it is accepting or managing CCR on or after October 14, 2015.

Active life or *in operation* means the period of operation beginning with the initial placement of CCR in the CCR unit and ending at completion of closure activities in accordance with § 257.102.

Active portion means that part of the CCR unit that has received or is receiving CCR or non-CCR waste and that has not completed closure in accordance with § 257.102.

Aquifer means a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells or springs.

Area-capacity curves means graphic curves which readily show the reservoir water surface area, in acres, at different elevations from the bottom of the reservoir to the maximum water surface, and the capacity or volume, in acre-feet, of the water contained in the reservoir at various elevations.

Areas susceptible to mass movement means those areas of influence (*i.e.*, areas characterized as having an active or substantial possibility of mass movement) where, because of natural or human-induced events, the movement of earthen material at, beneath, or adjacent to the CCR unit results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

Beneficial use of CCR means the CCR meet all of the following conditions:

(1) The CCR must provide a functional benefit;

(2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;

(3) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

(4) When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

Closed means placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with § 257.102 and has initiated post-closure care in accordance with § 257.104.

Coal combustion residuals (CCR) means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.

CCR fugitive dust means solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.

CCR landfill or landfill means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

CCR pile or pile means any non-containerized accumulation of solid, non-flowing CCR that is placed on the land. CCR that is beneficially used off-site is not a CCR pile.

CCR surface impoundment or impoundment means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

CCR unit means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.

Dike means an embankment, berm, or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

Displacement means the relative movement of any two sides of a fault measured in any direction.

Disposal means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste as defined in section 1004(27) of the Resource Conservation and Recovery Act into or on any land or water so that such solid waste, or constituent thereof, may enter the environment or be emitted into the air or discharged into any waters, including groundwaters. For purposes of this subpart, disposal does not include the storage or the beneficial use of CCR.

Downstream toe means the junction of the downstream slope or face of the CCR surface impoundment with the ground surface.

Encapsulated beneficial use means a beneficial use of CCR that binds the CCR into a solid matrix that minimizes its mobilization into the surrounding environment.

Existing CCR landfill means a CCR landfill that receives CCR both before and after October 14, 2015, or for which construction commenced prior to October 14, 2015 and receives CCR on or after October 14, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 18 2015

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: Correction of Inadvertent Errors in the Disposal of Coal Combustion Residuals from Electric Utilities (Tier 1; SAN 4470; RIN 2050-AE81)

FROM: Mathy Stanislaus (5101T)
Assistant Administrator

THRU: Joel Beauvais
Office of Policy (1804A)

Mary Kay Lynch
Office of General Counsel (2366A)

TO: Gina McCarthy (1101A)
Administrator

We recommend making six changes to the Coal Combustion Residuals Final Rule that was signed on December 19, 2014, but has not yet been published in the *Federal Register*. These changes insert regulatory text in instances in which it was inadvertently omitted from the final rule, make minor revisions to correct inadvertent errors, correct potentially confusing cross references, and clarify preamble language. This memorandum is submitted per OGC and OP guidance on changes to rule language after the rule has been signed by the Administrator but before it has been published in the *Federal Register*. [1]

1. Insertion of regulatory language to clarify the requirement that a facility must post all groundwater monitoring results on the facility's publicly accessible internet site.

First, regulatory language needs to be inserted to conform the regulatory text with the preamble to require all groundwater monitoring results be posted on the facility's publicly accessible internet site. The preamble discussion is very clear that all groundwater monitoring data are to be made available on the publicly accessible internet site.

For example, on page 115 of the prepublication version of the preamble to the final rule:

> It is more consistent with EPA's obligations under RCRA to put in place the additional protections that, based on the information currently available, are needed to protect health

[1] Memorandum from Ann Klee, General Counsel, and Brian Mannix, Associate Administrator for the Office of Policy, Economics and Innovation, *Changes to Rule Documents Prepared for the Administrator's Signature*, July 25, 2006.

> and the environment. As part of those requirements, EPA has developed a number of provisions designed to facilitate citizens to enforce the rule pursuant to RCRA section 7002. *Chief among these is the requirement to publicly post monitoring data*, along with critical documentation of facility operations, so that the public will have access to the information to monitor activities at CCR disposal facilities. (italics added)

In addition, on page 129 of the pre-publication version of the preamble to the final rule:

> As repeatedly discussed throughout this preamble, under section 4004(a) EPA must be able to demonstrate, based on the record available at the time the rule is promulgated that the final rule provisions will achieve the statutory standard. EPA explained in the proposal that a key component of EPA's support for determining that the rule achieves the statutory standard is the existence of a mechanism for states and citizens to monitor the situation, *such as when groundwater monitoring shows evidence of potential contamination, so that they can determine when intervention is appropriate*. The existence of effective oversight measures provides critical support for the statutory finding, particularly with respect to some of the more flexible alternatives EPA has adopted in certain of the technical standards in response to commenters' requests for greater flexibility. *These "transparency" requirements serve as a key component by ensuring that the entities primarily responsible for enforcing the requirements have access to the information necessary to determine whether enforcement is warranted. Unlike a federal or state regulatory authority, private citizens cannot access a private facility to conduct inspections.* (italics added)

Finally, on page 351 of the pre-publication version of the preamble to the final rule:

> Consistent with the proposal, the final rule also requires that the owner or operator of the CCR facility annually certify that each CCR unit is in compliance with the groundwater monitoring and corrective action provisions and provide a copy of this certification to the State Director. Because this is a self-implementing rule that relies on citizen enforcement, it is important for the owner or operator of the facility to periodically document that they are in compliance with the existing groundwater monitoring requirements, and an annual certification is the easiest and most effective way to achieve this. *While the groundwater monitoring data will be made available on the owner or operator's publicly accessible website and in the operating record of the facility*, the analysis of these data is complicated and requires a certain level of scientific expertise to analyze the data correctly. (italics added)

Nevertheless, the conforming text was inadvertently omitted from the rule. We recommend adding the phase, "in addition to all the monitoring data obtained under §§257.90-257.98" to the regulatory text at 40 CFR 257.90(e). The regulatory text will clearly reflect EPA's stated position as reflected throughout the preamble to the final rule.

2. Insertion of the word "coal" in the definition of a CCR landfill.

Secondly, as written, all underground and surface mines are excluded from the definition of CCR landfill, when it was clear that we intended to exclude only coal mines. The word "coal",

therefore, needs to be added to the definition of "CCR landfill" at 40 CFR 257.2 and 257.53. The Scope and Purpose section of the final rule [40 CFR 257.50(h)] states that "This subpart does not apply to CCR placement at active or abandoned underground or surface coal mines." Further, EPA made its intention clear in many places in the preamble, particularly on page 194 of the pre-publication version of the final rule which states:

> Several commenters also suggested that the definition of a CCR landfill should explicitly exclude the use of CCR at *surface coal mining and reclamation* operations to reflect the Agency's intention not to cover such activities. *The Agency agrees and has revised the definition to explicitly provide that the term CCR landfill does not include the use of CCR at coal mining and reclamation operations.* (italics added)

The addition of the word "coal" to the definition of "CCR landfill" will make the definition consistent with EPA's stated intent.

3. Insertion of regulatory text to make it clear that CCR surface impoundments may either retrofit with a composite liner or close.

Third, regulatory language is needed to eliminate an inconsistency between the regulatory text and preamble statements regarding the option for facilities to retrofit or close an existing CCR surface impoundment. The preamble is clear that such facilities have the option to retrofit or close the unit; however, the regulatory text does not explicitly provide for the retrofit option.

For example, on page 386 of the prepublication version of the preamble to the final rule:

> If corrective action is triggered, within three months the owner or operator must initiate an assessment of corrective measures. If the CCR unit is an unlined surface impoundment, *the unit must also initiate closure or begin to retrofit the unit.* The owner or operator could also simultaneously use these 3 months to demonstrate that the statistically significant increase found during assessment monitoring was due to another source or sampling and analysis error. (italics added)

On page 458 of the prepublication version of the preamble, the Agency specifies what is meant by retrofit of an unlined CCR surface impoundment, specifically, the removal of all CCR from the unit followed by the installation of a composite liner:

> ...In the final rule, EPA is allowing unlined CCR surface impoundments to continue to operate for the remainder of the active life, provided that the facility documents through groundwater monitoring that the CCR surface impoundment is not contaminating groundwater. However, if groundwater monitoring at the facility demonstrates that the unlined CCR surface impoundment has exceeded any groundwater protection standard, the owner or operator must initiate corrective action, *and either remove all CCR from the unit and install a composite liner (i.e., "retrofit") or close within five years.* In a departure from the proposed rule, CCR surface impoundments less than 40 acres may receive one two-year extension, providing for a maximum of seven years to complete closure. Units greater than 40 acres may receive up to five two-year extensions providing a maximum of 15 years to complete closure. These units are also eligible for alternative closure timeframes to account for site specific operational constraints. (italics added)

It is therefore necessary to rename 40 CFR 257.102 to include "retrofit" and to add paragraph (k) "Criteria to retrofit an existing CCR surface impoundment" to 40 CFR 257.102. In addition, it is necessary to make conforming changes to add a definition of retrofit, and the appropriate recordkeeping, notification, and internet posting requirements. As a result of these suggested changes, the regulatory text will clearly reflect EPA's stated position in the preamble that surface impoundments have the option to retrofit or close.

4. Minor revisions to paragraphs specifying requirements that apply when a deficiency or release from a CCR unit is identified during a structural stability assessment or annual inspection.

Fourth, minor revisions are necessary in a number of rule paragraphs that specify the requirements that apply when a deficiency of or release from a CCR unit is identified during a structural stability assessment or annual inspection. The final rule clearly requires that the owner or operator of the CCR unit remedy the deficiency or release as soon as feasible; however, the associated recordkeeping, notification and internet website requirements require the preparation and making publicly available of an "action plan." Since an "action plan" is not required, this requirement should be removed from the recordkeeping, notification, and internet website requirements and replaced with language to require that both the deficiency or release and the "documentation of corrective measures taken" be made available to the public. The rule sections affected by this change in 40 CFR 257.73, 257.74, 257.83, 257.84, 257.105, 257.106, and 257.107.

5. Deletion of potentially confusing cross references to timeframes for completing closure.

Fifth, the regulatory text contains cross references to the required timeframes for completing the closure of CCR surface impoundments. The cross references point only to two of the circumstances where closure must be initiated and not the third. To avoid any possible confusion, we recommend deleting any such cross references. Specifically, it is optimal to strike the existing regulatory reference to "conducted pursuant to either paragraph (e)(1) or (e)(2) of this section." This revision would apply both to 40 CFR 257.102(f)(1)(i) and (ii).

6. Minor revision to the Preamble to clarify that lead does not have an MCL.

Finally, we inadvertently omitted lead from the discussion of constituents on Appendix IV that do not have a maximum contaminant level (MCL). Lead does not have an MCL and therefore should be mentioned along with cobalt, lithium and molybdenum. The groundwater protection standards for lead will therefore be the same as for all other constituents without MCLs, i.e., background level(s). No changes are required in the regulatory text.

Upon your approval of these corrections, we will make these revisions prior to publication of the rule in the *Federal Register*. Please let me know if you have any questions about these proposed corrections.

I approve the following corrections (additional text is shown in italics, deleted text in strike out) to the Coal Combustion Residuals Final Rule.

The attachment to this memorandum contains the pages with the regulatory and preamble corrections as described in the following paragraphs. These corrections in the attachment appear in redline and strikeout. The page numbers in parentheses indicate the page numbers on which the corrections are found.

At 40 CFR 257.90(e):

(3) *In addition to all the monitoring data obtained under §§257.90-257.98, a* ~~A~~ summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs; (Page 669)

At 40 CFR 257.2:

CCR landfill or landfill means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface *coal* mine, or a cave. For purposes of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR. (Page 603)

At 40 CFR 257.53:

CCR landfill or landfill means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface *coal* mine, or a cave. For purposes of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR. (Page 610)

At 40 CFR 257.53 Definitions

*Retrofit means to remove all CCR and contaminated soils and sediments from the CCR surface impoundment, and to ensure the unit complies with the requirements in § 257.72. (*Page 618)

At 40 CFR 257.101(a)(1):

§ 257.101 Closure *or retrofit* of CCR *units* ~~landfills and CCR surface impoundments~~.

(a) The owner or operator of an existing unlined CCR surface impoundment, as determined under § 257.71(a), is subject to the requirements of paragraph (a)(1) of this section.

(1) Except as provided by paragraph (a)(3) of this section, if at any time after **[INSERT DATE 6 MONTHS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]** an owner or operator of an existing unlined CCR surface impoundment determines in any sampling event that the concentrations of one or more constituents listed in appendix IV to this part are detected at statistically significant levels above the groundwater protection standard established under § 257.95(h) for such CCR unit, within six months of making such

determination, the owner or operator of the existing unlined CCR surface impoundment must cease placing CCR and non-CCR waste streams into such CCR surface impoundment and *either retrofit or* close the CCR unit in accordance with the requirements of § 257.102.

(2) An owner or operator of an existing unlined CCR surface impoundment that closes in accordance with paragraph (a)(1) of this section must include a statement in the notification required under § 257.102(g) *or (k)(5)* that the CCR surface impoundment is closing *or retrofitting* under the requirements of paragraph (a)(1) of this section.

(3) The timeframe specified in paragraph (a)(1) of this section does not apply if the owner or operator complies with the alternative closure procedures specified in § 257.103.

(4) At any time after the initiation of closure under paragraph (a)(1) of this section, the owner or operator may cease closure activities and initiate a retrofit of the CCR unit in accordance with the requirements of §257.102(k).

(Page 698-99)

At 40 CFR 257.102

§ 257.102 Criteria for conducting *the* closure *or retrofit* of CCR *units* ~~landfills and CCR surface impoundments~~.

(a) Closure of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must be completed either by leaving the CCR in place and installing a final cover system or through removal of the CCR and decontamination of the CCR unit, as described *in paragraphs (b) through (j) of this section. Retrofit of a CCR surface impoundment must be completed in accordance with the requirements in paragraph (k) of this section.* (Page 701)

(k) Criteria to retrofit an existing CCR surface impoundment. (1) To retrofit and existing CCR surface impoundment, the owner or operator must:

(i) First remove all CCR, including any contaminated soils and sediments from the CCR unit; and

(ii) Comply with the requirements in § 257.72.

(iii) A CCR surface impoundment undergoing a retrofit remains subject to all other requirements of this subpart, including the requirement to conduct any necessary corrective action.

(2) Written Retrofit Plan. (i) Content of the plan. The owner or operator must prepare a written retrofit plan that describes the steps necessary to retrofit the CCR unit consistent with recognized and generally accepted good engineering practices. The written retrofit plan must include, at a minimum, all of the following information:

(A) A narrative description of the specific measures that will be taken to retrofit the CCR unit in accordance with this section.

(B) A description of the procedures to remove all CCR and contaminated soils and sediments from the CCR unit.

(C) An estimate of the maximum amount of CCR that will be removed as part of the retrofit operation.

(D) An estimate of the largest area of the CCR unit that will be affected by the retrofit operation.

(E) A schedule for completing all activities necessary to satisfy the retrofit criteria in this section, including an estimate of the year in which retrofit activities of the CCR unit will be completed.

(ii) Timeframes for preparing the initial written retrofit plan. (A) No later than 60 days prior to date of initiating retrofit activities, the owner or operator must prepare an initial written retrofit plan consistent with the requirements specified in paragraph (k)(2) of this section. For purposes of this subpart, initiation of retrofit activities has commenced if the owner or operator has ceased placing waste in the unit and completes any of the following actions or activities:

(1) Taken any steps necessary to implement the written retrofit plan;

(2) Submitted a completed application for any required state or agency permit or permit modification; or

(3) Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the retrofit of a CCR unit.

(B) The owner or operator has completed the written retrofit plan when the plan, including the certification required by paragraph (k)(2)(iv) of this section, has been placed in the facility's operating record as required by § 257.105(j)(1).

(iii) Amendment of a written retrofit plan. (A) The owner or operator may amend the initial or any subsequent written retrofit plan at any time.

(B) The owner or operator must amend the written retrofit plan whenever:

(1) There is a change in the operation of the CCR unit that would substantially affect the written retrofit plan in effect; or

(2) Before or after retrofit activities have commenced, unanticipated events necessitate a revision of the written retrofit plan.

(C) The owner or operator must amend the retrofit plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the revision of an existing written retrofit plan. If a written retrofit plan is revised after retrofit activities have commenced for a CCR unit, the owner or operator must amend the current retrofit plan no later than 30 days following the triggering event.

(iv) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the activities outlined in the written retrofit plan, including any amendment of the plan, meet the requirements of this section.

(3) Deadline for completion of activities related to the retrofit of a CCR unit. Any CCR surface impoundment that is being retrofitted must complete all retrofit activities within the same

time frames and procedures specified for the closure of a CCR surface impoundment in § 257.102(f) or, where applicable, § 257.103.

(4) Upon completion, the owner or operator must obtain a certification from a qualified professional engineer verifying that the retrofit activities have been completed in accordance with the retrofit plan specified in paragraph (k)(2) of this section and the requirements of this section.

(5) No later than the date the owner or operator initiates the retrofit of a CCR unit, the owner or operator must prepare a notification of intent to retrofit a CCR unit. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by § 257.105(j)(5).

(6) Within 30 days of completing the retrofit activities specified in paragraph (k)(1) of this section, the owner or operator must prepare a notification of completion of retrofit activities. The notification must include the certification by a qualified professional engineer as required by paragraph (k)(4) of this section. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by § 257.105(j)(6).

(7) At any time after the initiation of a CCR unit retrofit, the owner or operator may cease the retrofit and initiate closure of the CCR unit in accordance with the requirements of § 257.102.

(8) The owner or operator of the CCR unit must comply with the retrofit recordkeeping requirements specified in § 257.105(j), the retrofit notification requirements specified in § 257.106(j), and the retrofit internet requirements specified in § 257.107(j).

(Pages 714 – 717)

At 40 CFR 257.105 Recordkeeping Requirements

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this subpart must place the following information, as it becomes available, in the facility's operating record:

(1) The written retrofit plan, and any amendment of the plan, as required by § 257.102(k)(2), except that only the most recent retrofit plan must be maintained in the facility's operating record irrespective of the time requirement specified in paragraph (b) of this section.

(2) The notification of intent that the retrofit activities will proceed in accordance with the alternative procedures in § 257.103.

(3) The annual progress reports required under the alternative retrofit requirements as required by § 257.103.

(4) The written demonstration(s), including the certification in § 257.102(f)(2)(iii), for a time extension for completing retrofit activities as required by § 257.102(k)(3).

(5) The notification of intent to initiate retrofit of a CCR unit as required by § 257.102(k)(5).

(6) The notification of completion of retrofit activities as required by § 257.102(k)(6).

(Pages 730-731)

At 40 CFR 257.106 Notification Requirements

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this subpart must notify the State Director and/or appropriate Tribal authority when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

(1) Provide notification of the availability of the written retrofit plan, and any amendment of the plan, specified under § 257.105(j)(1).

(2) Provide notification of intent to comply with the alternative retrofit requirements specified under § 257.105(j)(2).

(3) The annual progress reports under the alternative retrofit requirements as required by § 257.105(j)(3).

(4) Provide notification of the availability of the demonstration(s) for a time extension for completing retrofit activities specified under § 257.105(j)(4).

(5) Provide notification of intent to initiate retrofit of a CCR unit specified under § 257.105(j)(5).

(6) Provide notification of completion of retrofit activities specified under § 257.105(j)(6).

(Pages 736-737)

40 CFR 257.107 Publicly accessible internet site requirements

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this subpart must place the following information on the owner or operator's CCR website:

(1) The written retrofit plan, and any amendment of the plan, specified under § 257.105(j)(1).

(2) The notification of intent to comply with the alternative retrofit requirements as required by § 257.105(j)(2).

(3) The annual progress reports under the alternative retrofit requirements as required by § 257.105(j)(3).

(4) The demonstration(s) for a time extension for completing retrofit activities specified under § 257.105(j)(4).

(5) The notification of intent to retrofit a CCR unit specified under § 257.105(j)(5).

(6) The notification of completion of retrofit activities specified under § 257.105(j)(6).

(Page 742)

At 40 CFR 257.73(d)(2) and 257.74(d)(2):

(2) The periodic assessment described in paragraph (d)(1) of this section must identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the

owner or operator unit must remedy the deficiency or release as soon as feasible *and prepare documentation detailing the corrective measures taken.*

(Pages 642 and 651)

At 40 CFR 257.83(b)(5) and 257.84(b)(5):

(5) If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible *and prepare documentation detailing the corrective measures taken.*

(Pages 664 and 667)

At 40 CFR 257.105(f)(11) and (g)(7):

(f) Design criteria. The owner or operator of a CCR unit subject to this subpart must place the following information, as it becomes available, in the facility's operating record:
(11) ~~The action plan~~ *Documentation detailing the corrective measures taken* to remedy ~~structural stability deficiencies~~ *the deficiency or release* as required by §§ 257.73(d)(2) and 257.74(d)(2).
(g) Operating criteria. The owner or operator of a CCR unit subject to this subpart must place the following information, as it becomes available, in the facility's operating record:
(7) ~~The action plan~~ *Documentation detailing the corrective measures taken to remedy the deficiency or release* as required by *§§* 257.83(b)(5) *and 257.84(b)(5).*

(Pages 726 and 727)

At 40 CFR 257.106(f)(10) and (g)(6):

(f) Design criteria. The owner or operator of a CCR unit subject to this subpart must notify the State Director and/or appropriate Tribal authority when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:
(10) Provide notification of the availability of the ~~action plan~~ *documentation detailing the corrective measures taken* to remedy ~~structural stability deficiencies~~ *the deficiency or release* specified under § 257.105(f)(11).
(g) Operating criteria. The owner or operator of a CCR unit subject to this subpart must notify the State Director and/or appropriate Tribal authority when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:
(6) Provide notification of the availability of the ~~action plan~~ *documentation detailing the corrective measures taken to remedy the deficiency or release* specified under § 257.105(g)(7).

(Pages 733 and 734)

At 40 CFR 257.107(f)(10) and (g)(6):

(f) Design criteria. The owner or operator of a CCR unit subject to this subpart must place the following information on the owner or operator's CCR website:
(10) The ~~action plan~~ *documentation detailing the corrective measures taken* to remedy ~~structural stability deficiencies~~ *the deficiency or release* specified under § 257.105(f)(11).
(g) Operating criteria. The owner or operator of a CCR unit subject to this subpart must place the following information on the owner or operator's CCR website:
(6) The ~~action plan~~ *documentation detailing the corrective measures taken to remedy the deficiency or release* specified under § 257.105(g)(7).

(Page 739)

At 40 CFR 257.102(f):

(f) Completion of closure activities. (1) Except as provided for in paragraph (f)(2) of this section, the owner or operator must complete closure of the CCR unit:
(i) For existing and new CCR landfills and any lateral expansion of a CCR landfill, within six months of commencing closure activities. ~~pursuant to either paragraph (e)(1) or (e)(2) of this section~~.
(ii) For existing and new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, within five years of commencing closure activities~~. pursuant to either paragraph (e)(1) or (e)(2) of this section~~.

(Page 710)

Preamble Modifications

On page 370 of the pre-publication version of the preamble to the final rule, insert the word "lead" in two places.

For each Appendix IV constituent that is detected, a ground water protection standard must be set. The groundwater protection standards must be the MCL or the background concentration level for the detected constituent, whichever is higher. If there is no MCL promulgated for a detected constituent, then the groundwater protection standard must be set at background. The proposed rule would have allowed the owner or operator to establish an alternative groundwater protection standard for constituents for which MCLs have not been established provided that the alternative groundwater protection standard has been certified by an independent registered professional engineer and the state has been notified that the alternative groundwater protection standard has been placed in the operating record and on the owner's or operator's publicly accessible internet site. This provision had been adopted from the part 258 regulations, but was determined to be inappropriate in a self-implementing rule, as it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and was too susceptible to potential abuse. Additionally, numerous comments were received suggesting that only those constituents with MCLs be included in Appendix IV. The

commenters were concerned that only MCLs are enforceable. With the exception of cobalt, *lead,* lithium and molybdenum (included on Appendix IV because of their relevance in the risk assessment and damage cases), all Appendix IV constituents have an MCL. In the proposed rule, as stated above, owner or operators were allowed to establish certain types of alternative groundwater protection standards. In the final rule, if a constituent has no MCL (i.e., cobalt, *lead,* lithium and molybdenum), their groundwater protection standards will be their background levels. These background standards are sufficiently precise that they are enforceable.

(Page 370)

I approve the corrections listed above to the Coal Combustion Residuals Final Rule:

MAR 2 0 2015

Gina McCarthy

Administrator

Attachment

*Honorable Kurt J Boehm
Attorney at Law
Boehm, Kurtz & Lowry
36 East Seventh Street
Suite 1510
Cincinnati, OHIO 45202

*Ed Staton
VP - State Regulation and Rates
Kentucky Utilities Company
220 W. Main Street
P. O. Box 32010
Louisville, KY 40232-2010

*Jody Kyler Cohn
Boehm, Kurtz & Lowry
36 East Seventh Street
Suite 1510
Cincinnati, OHIO 45202

*Ed Staton
VP - State Regulation and Rates
Louisville Gas and Electric Company
220 W. Main Street
P. O. Box 32010
Louisville, KY 40202

*Robert Conroy
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202

*Honorable Allyson K Sturgeon
Senior Corporate Attorney
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202

*Kentucky Utilities Company
220 W. Main Street
P. O. Box 32010
Louisville, KY 40232-2010

*John Walters, Jr.
General Counsel/CFO
Sterling Ventures, LLC
376 South Broadway
Lexington, KENTUCKY 40508

*Honorable Michael L Kurtz
Attorney at Law
Boehm, Kurtz & Lowry
36 East Seventh Street
Suite 1510
Cincinnati, OHIO 45202

*Louisville Gas and Electric Company
220 W. Main Street
P. O. Box 32010
Louisville, KY 40232-2010

*Honorable Kendrick R Riggs
Attorney at Law
Stoll Keenon Ogden, PLLC
2000 PNC Plaza
500 W Jefferson Street
Louisville, KENTUCKY 40202-2828