COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

JOINT APPLICATION OF KENERGY CORP. AND BIG RIVERS ELECTRIC CORPORATION FOR APPROVAL OF CONTRACTS AND FOR A DECLARATORY ORDER	))))	CASE NO. 2013-00221

NOTICE OF FILING

Notice is given to all parties that the following materials have been filed into the record of this proceeding:

- The digital video recording of the evidentiary hearing conducted on July 30, 2013 in this proceeding;

- Certification of the accuracy and correctness of the digital video recording;

- All exhibits introduced at the evidentiary hearing conducted on July 30, 2013 in this proceeding;

- The written log listing, *inter alia*, the date and time of where each witness' testimony begins and ends on the digital video recording of the hearing conducted on July 30, 2013.

A copy of this Notice, the certification of the digital video record, exhibit list, and hearing log have been served by first class mail upon all persons listed at the end of this Notice. Parties desiring an electronic copy of the digital video recording of the hearing in Windows Media format may download a copy at http://psc.ky.gov/av_broadcast/2013-00221/2013-00221_30Jul13_Inter.asx. Parties wishing an annotated digital video

recording may submit a written request by electronic mail to pscfilings@ky.gov. A minimal fee will be assessed for a copy of this recording.

The exhibits introduced at the evidentiary hearing may be downloaded at http://psc.ky.gov/pscscf/2013%20cases/2013-00221/.

Done at Frankfort, Kentucky, this 2nd day of August 2013.

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Linda Faulkner
Director, Filings Division
Public Service Commission of Kentucky

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CERTIFICATE

We, Sonya J. Harward and Pam J. Ayer, hereby certify that:

1. The attached DVD contains a digital recording of the hearing conducted in the above-styled proceeding on July 30, 2013. Hearing Log, Exhibits, Exhibit List, and Witness List are included with the recording on July 30, 2013.

2. We are responsible for the preparation of the digital recording.

3. The digital recording accurately and correctly depicts the hearing.

4. The "Exhibit List" attached to this Certificate lists all exhibits introduced at the hearing of July 30, 2013.

5. The "Hearing Log" attached to this Certificate accurately and correctly states the events that occurred at the hearing of July 30, 2013 and the time at which each occurred.

Given this 1st day of August, 2013.

Sonya J. Harward (Boyd), Notary Public
State-at-Large

My Commission Expires: Aug. 25, 2013

Pam J. Ayer

JAVS Session Report - Detail

2013-00221-30-July-2013

Kenergy Corp. and Big Rivers Electric Corp.

Date:	Type:	Location:	Department:
7/30/2013	Other	Public Service Commission	Hearing Room 1 (HR 1)

Judge: David Armstrong; Linda Breathitt; Jim Gardner
Witness: Bob Berry - Big Rivers; Sean Byrne - Century Kentucky; Michael Early - Century Kentucky; Lane Kollen - KIUC; Donald Morrow - Century Kentucky; Greg Starheim - Kenergy
Clerk: Pam Ayer; Sonya Harward

Event Time	Log Event	
10:06:34 AM	Session Started	
10:06:37 AM	Session Paused	
10:07:13 AM	Session Resumed	
10:07:19 AM	Preliminary remarks	
	Note: Harward, Sonya	Chairman Armstrong
10:10:17 AM	Introductions	
10:12:16 AM	Public Notice	
	Note: Harward, Sonya	None required.
10:12:30 AM	Outstanding motions	
	Note: Harward, Sonya	None
10:12:41 AM	Witness Robert Berry takes the stand for Big Rivers.	
	Note: Harward, Sonya	Chief Operating Officer of Big Rivers
10:13:41 AM	Direct Exam by Big Rivers Atty. Miller.	
10:14:02 AM	Witness Berry provided corrections to his previously filed testimony.	
	Note: Harward, Sonya	Addition to rebuttal testimony, Exhibit 2, Life Study Report is missing the Word document.
	Note: Harward, Sonya	Direct testimony, page 21 of 49, line 10, towards the end of the sentence, the word Kenergy should be changed to Century.
10:15:41 AM	Exhibit 1 - Big Rivers	
	Note: Harward, Sonya	Attachment Y Study Report, July 18, 2013 (This document is an addition that was mistakenly left out of Witness Berry's Rebuttal Testimony, the Life Study Report.)
10:16:20 AM	Kenergy Atty. Hopgood has no questions for Witness Berry.	
10:16:27 AM	Cross Examination of Witness Berry by AG Atty. Hans.	
	Note: Harward, Sonya	Questioned about testimony of Larry Holloway in CN 2012-00535 and distributed a copy of this document.
10:18:40 AM	Exhibit 1 - AG	
	Note: Harward, Sonya	CN 2012-00535, Direct Testimony of Larry W. Holloway, P.E.
10:23:00 AM	Big Rivers Atty. Miller's objection to the entry of Exhibit 1.	
10:24:06 AM	Century Atty. Weishaar's objection to Exhibit 1 - AG.	
10:24:38 AM	AG Atty. Hans speaks about Exhibit 1 - AG.	
10:25:41 AM	KIUC Atty. Kurtz speaks about Exhibit 1 - AG.	
10:27:23 AM	Chairman Armstrong accepts Exhibit 1 - AG into record.	
10:28:04 AM	Century Atty. Weishaar clarified about the Commission's acceptance of Exhibit 1 - AG.	
	Note: Harward, Sonya	Admitted but not for truth of the contents.
10:28:48 AM	AG Atty. Hans resumed cross examination of Witness Berry.	
	Note: Harward, Sonya	Discussing SSR.
10:33:41 AM	AG Atty. Hans	
	Note: Harward, Sonya	Questioning about idling Coleman Plant by June 1, 2014.

10:41:44 AM	AG Atty. Hans	
	Note: Harward, Sonya	Referencing page 6, lines 12-24, of Witness Berry's Rebuttal Testimony.
10:43:54 AM	Exhibit 2 - AG (Later not accepted for filing in this hearing.)	
	Note: Harward, Sonya	CN 2012-00535, Big Rivers Response to Post-Hearing Request for Information, Item 13, dated July 3, 2013, Witness James Haner.
10:44:30 AM	AG Atty. Hans	
	Note: Harward, Sonya	Question Witness Berry about Exhibit 2 - AG that was just handed out. (exhibit pulled)
10:47:50 AM	AG Atty. Hans	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 7, lines 1-14.
10:52:07 AM	AG Atty. Hans	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 7-8, discussing direct agreement.
10:56:28 AM	Century Atty. Weishaar interjection for clarification.	
	Note: Harward, Sonya	What does AG Atty. Hans mean by 'transmission upgrades'.
10:59:08 AM	AG Atty. Hans	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 8, line 15, and over to page 9.
11:07:38 AM	POST HEARING REQUEST	
	Note: Harward, Sonya	What is the deadline to ask MISO for a one-year extension to install MATS equipment?
11:09:00 AM	AG Atty. Hans asked that Exhibit 2 - AG be accepted for filing in this hearing.	
11:09:14 AM	Big Rivers Atty. Miller objection to Exhibit 2 - AG.	
11:10:42 AM	Chairman Armstrong will not allow Exhibit 2 - AG.	
	Note: Harward, Sonya	This Exhibit was pulled from the hearing exhibits.
11:11:00 AM	Cross Examination of Witness Berry by Century Atty. Weishaar.	
11:12:20 AM	Century Atty. Weishaar	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 18.
11:21:04 AM	Century Atty. Weishaar	
	Note: Harward, Sonya	Questioning Witness Berry about his job responsibility and scheduling line outages.
11:23:50 AM	Century Atty. Weishaar	
	Note: Harward, Sonya	Questioning about live line maintenance.
11:27:11 AM	Century Atty. Weishaar	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 24.
11:31:10 AM	Century Atty. Weishaar	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 25.
11:32:10 AM	Cross Examination of Witness Berry by KIUC Atty. Kurtz.	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, pp. 14-18.
11:35:11 AM	Big Rivers Atty. Miller objection.	
	Note: Harward, Sonya	Discussing 'all in' rate.
11:39:54 AM	KUIC Atty. Kurtz	
	Note: Harward, Sonya	Questioning about smelters contracts and finance issues.
11:46:31 AM	KIUC Atty. Kurtz	
	Note: Harward, Sonya	Questioning about Declaratory Order that is being requested in this case.
11:50:16 AM	Break and return with PSC Staff questions.	
11:51:07 AM	Session Paused	
1:02:26 PM	Session Resumed	
1:02:34 PM	Cross Examination of Witness Berry by PSC Atty. Raff.	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 4, line 12.
	Note: Harward, Sonya	Questioning about negotiations.

1:05:36 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Referencing Attorney General Comments in this case, p. 6.
1:06:04 PM	Exhibit 1 - PSC	
	Note: Harward, Sonya	Letter from Gov. Steven Beshear to Mark Bailey, Big Rivers, and Michael Bless, Century, dated Feb. 13, 2013.
1:10:00 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Questioning about contracts not being signed and their willingness to sign.
1:11:35 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, pp. 25-26.
1:23:11 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Questioning continued concerning MISO and these negotiations.
1:37:42 PM	Vice Chairman Gardner interjected with a question.	
	Note: Harward, Sonya	Questioned Witness Berry about two agreements he mentioned with two different terms when dealing with capital.
1:41:54 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Referenced Witness Berry's Response to KIUC Initial Request for Information, Item 8, about expenses included in SSR agreement.
1:43:32 PM	Commissioner Breathitt interjected with clarifying questions.	
1:44:13 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Questioned about CPCN the PSC granted for MATS equipment installation on Coleman.
1:44:56 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Referenced Testimony of Lake Kollen, p, 16, line 40.
1:47:46 PM	Chairman Armstrong Cross Examination of Witness Berry.	
	Note: Harward, Sonya	Explain 'must run' SSR in relationship to Century load of 482 MW.
1:49:26 PM	Vice Chairman Gardner Cross Examination of Witness Berry.	
	Note: Harward, Sonya	Asked about what harm and benefits that may come to members due to these contracts.
1:52:59 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Clarified that SSR with MISO will have two parts and one budget associated with it.
1:58:59 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Asked about two rate case impacts...
2:02:48 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Questioning about Tax Indemnity Agreement.
	Note: Harward, Sonya	Referenced page 31 of Witness Berry's Direct Testimony.
2:07:04 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Referencing Witness Berry's Direct Testimony, p. 46, resolving creditor issues.
2:08:28 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Referencing Witness Berry's Rebuttal Testimony, p. 19, about dynamic reactive equipment.
2:10:40 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Is Big Rivers concerned about EPA regulations concerning carbon when putting additional $29M into Coleman for MATS compliance?
2:12:34 PM	Commissioner Breathitt Cross Examination of Witness Berry.	
	Note: Harward, Sonya	Questions about output of Coleman units, operation of Coleman units at what capacity, etc.
2:18:00 PM	Commissioner Breathitt	
	Note: Harward, Sonya	Referencing Direct Testimony of Lane Kollen, pp. 15-16.

2:19:16 PM	Re-Direct Examination of Witness Berry by Big Rivers Atty. Miller.	
	Note: Harward, Sonya	Redirected questions about live line maintenance, the request for a Declaratory Order, alternative approaches MISO has used in SSR agreements in regards to capital, and negoiations during Legislation Session.
2:24:39 PM	Re-Cross Examination of Witness Berry by Century Atty. Weishaar.	
2:25:27 PM	Re-Cross Examination of Witness Berry by PSC Atty. Raff.	
2:28:13 PM	Witness Berry dismissed.	
2:28:31 PM	Session Paused	
2:39:32 PM	Session Resumed	
2:39:36 PM	Witness Greg Starheim takes the stand for Kenergy Corp.	
	Note: Harward, Sonya	President and CEO of Kenergy Corp.
2:40:34 PM	Direct Examination of Witness Starheim by Kenergy Atty. Hopgood.	
	Note: Harward, Sonya	Confirmed that testimony is still accurate.
2:40:50 PM	Cross Examination of Witness Starheim by AG Atty. Hans.	
	Note: Harward, Sonya	Asked about Witness's qualifations and years of service with Kenergy.
2:42:10 PM	AG Atty. Hans	
	Note: Harward, Sonya	Referencing Rebuttal Testimony of Witness Starheim, p. 8, lines 17-19.
2:44:58 PM	AG Atty. Hans.	
	Note: Harward, Sonya	Referencing Rebuttal Testimony of Witness Starheim, p. 9, line 16.
2:54:38 PM	AG Atty. Hans	
	Note: Harward, Sonya	Questioning about Kenergy's certainty of Century continuing operation.
2:56:25 PM	Cross Examination of Witness Starheim by Century Atty. Weishaar.	
	Note: Harward, Sonya	Referencing Rebuttal Testimony of Witness Starheim, p. 12.
2:59:32 PM	Cross Examination of Witness Starheim by KIUC Atty. Kurtz.	
3:02:05 PM	KIUC Atty. Kurtz	
	Note: Harward, Sonya	Questioned about Century getting a rate cut and others having a 110 percent increase.
3:08:26 PM	KIUC Atty. Kurtz	
	Note: Harward, Sonya	Asked about his knowledge of House Bill 211 and Kentucky Supreme Court proceeding concerning Duke.
3:09:10 PM	Cross Examination of Witness Starheim by PSC Atty. Raff.	
	Note: Harward, Sonya	Asked if he thought Century would remain in operation if PSC approved the proposed contracts.
3:11:48 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Questioned about 2009 Power Supply Agreements and the Tiers.
3:15:47 PM	Vice Chairman Gardner Cross Examination of Witness Starheim.	
	Note: Harward, Sonya	Referencing Direct Testimony of Witness Starheim, p. 9.
3:19:40 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Referencing Direct Testimony of Witness Starheim, p. 11.
3:20:57 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Referencing Direct Testimony of Witness Starheim, p. 13, line 4.
3:22:54 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Referencing Direct Testimony of Witness Starheim, p. 19.
3:23:42 PM	Vice Chairman Gardner	
	Note: Harward, Sonya	Asked what are the expenses for June and July that Century is paying on behalf of Kenergy for this proceeding?
3:26:34 PM	Commissioner Breathitt Cross Examination of Witness Starheim.	
	Note: Harward, Sonya	Will Kenergy be able to handle this new arrangement?
3:30:53 PM	Re-Direct Examination of Witness Starheim by Kenergy Atty. Hopgood.	
	Note: Harward, Sonya	Referenced Witness Starheim's Response to KIUC Request for Information, Item 13, Tab C.

3:32:01 PM	Re-Cross Examination of Witness Starheim by PSC Atty. Raff.	
	Note: Harward, Sonya	Questioning about Century's right for 60-day termination for convenience of the contract.
3:34:49 PM	Re-Cross Examination of Witness Starheim by Vice Chairman Gardner.	
	Note: Harward, Sonya	Question about resolution of disputes.
3:35:33 PM	Witness Starheim dismissed.	
3:36:25 PM	Witness Lane Kollen takes the stand for KIUC.	
	Note: Harward, Sonya	Vice President of J. Kennedy and Assoc.
	Note: Harward, Sonya	Position is that Commission approve agreement subject to 3 conditions.
3:37:52 PM	Witness Kollen correction to testimony.	
	Note: Harward, Sonya	On p. 6, line 23, the words "are pending" should be replaced by "were quantified".
3:38:42 PM	No questions for Witness Kollen by Big Rivers, Kenergy, Century, and AG.	
3:38:48 PM	Vice Chairman Gardner Cross Examination of Witness Kollen.	
3:40:17 PM	Chairman Armstrong Cross Examination of Witness Kollen.	
	Note: Harward, Sonya	How many cases of this type has witness been involved in?
3:42:07 PM	Commissioner Breathitt Cross Examination of Witness Kollen.	
	Note: Harward, Sonya	Describe how you get to the 110 percent rate increase.
	Note: Harward, Sonya	Discuss fixed environmental costs.
3:45:06 PM	Cross Examination of Witness Kollen by PSC Atty. Raff.	
3:47:29 PM	Re-Direct Examination of Witness Kollen by KIUC Atty. Kurtz.	
3:48:07 PM	Exhibit 1 - KIUC	
	Note: Harward, Sonya	Big Rivers Electric Corporation, Cost of Service Study, Estimate of Retail Rate Increase, 12 Months Ended Jan. 31, 2015.
3:50:17 PM	Exhibit 2 - KIUC	
	Note: Harward, Sonya	CN 2012-00535, Big Rivers Forecasted Test Period Filing Requirements, Tab No. 59, Witness Billie Richert.
3:53:34 PM	Vice Chairman Gardner Re-Cross Examination of Witness Kollen.	
	Note: Harward, Sonya	Question about Termination Agreement.
3:54:42 PM	Witness Kollen dismissed.	
3:55:13 PM	Break	
3:55:17 PM	Session Paused	
4:06:37 PM	Session Resumed	
4:06:43 PM	Witness Sean Byrne takes stand for Century.	
	Note: Harward, Sonya	Plant Manager, Century Kentucky
4:07:30 PM	Direct Examination of Witness Byrne by Century Atty. Weishaar.	
	Note: Harward, Sonya	Confirmed that testimony is accurate.
4:07:37 PM	No questions for Witness Byrne by Big Rivers and Kenergy.	
4:07:50 PM	Cross Examination of Witness Byrne by KIUC Atty. Kurtz	
	Note: Harward, Sonya	Referencing page 4 and 5 of Witness Byrne Direct Testimony.
	Note: Harward, Sonya	Witness believes there may be an error in this portion of his testimony about US Smelters average.
4:13:52 PM	POST HEARING REQUEST	
	Note: Harward, Sonya	In order to correct Witness Byrne's testimony, provide the world and US average mwh power rate for the smelters.
4:18:30 PM	KIUC Atty. Kurtz	
	Note: Harward, Sonya	Questioning about $100M cost to re-start plant if closed down.
4:21:18 PM	KIUC Atty. Kurtz	
	Note: Harward, Sonya	Questioning about market access fee.
4:22:41 PM	KIUC Atty. Kurtz	
	Note: Harward, Sonya	Asked Century Counsel when Post Hearing Request for Witness Byrne can be made available. Response was two days.

4:24:04 PM	Cross Examination of Witness Byrne by PSC Atty. Nguyen.	
	Note: Harward, Sonya	Witness's Testimony, p. 1, lines 20-21, and then page 5, line 17-20.
4:26:44 PM	PSC Atty. Nguyen	
	Note: Harward, Sonya	Is it Century's position that the contracts will not be accepted if the Commission changes anything in the?
4:27:18 PM	PSC Atty. Nguyen	
	Note: Harward, Sonya	Witness's Testimony, p. 6, lines 12-13.
4:28:37 PM	Cross Examination of Witness Bryne by Vice Chairman Gardner.	
4:29:01 PM	Re-Direct Examination of Witness Byrne by Century Atty. Weishaar.	
4:30:20 PM	Witness Byrne dismissed.	
4:30:31 PM	Witness Donald Morrow takes the stand for Century.	
	Note: Harward, Sonya	Sr. VP, Quanta Technology
4:32:31 PM	Direct Examination of Witness Morrow by Century Atty. Weishaar.	
	Note: Harward, Sonya	Confirmed that testimony is still accurate.
4:32:53 PM	No questions for Witness Morrow by Big Rivers, Kenergy, and the AG.	
4:33:04 PM	Cross Examination of Witness Morrow by KIUC Atty. Kurtz.	
	Note: Harward, Sonya	Questioning about live line maintenance.
4:36:39 PM	Cross Examination of Witness Morrow by PSC Atty. Raff.	
	Note: Harward, Sonya	When was witness first contacted to participate in this case and has he had any conversations with Big Rivers or Vectron?
4:38:43 PM	Witness Morrow dismissed.	
4:38:54 PM	Witness Michael Early takes the stand for Century.	
	Note: Harward, Sonya	Corporate Energy Director of Century Kentucky.
4:39:56 PM	Direct Examination of Witness Early by Century Atty. Weishaar.	
	Note: Harward, Sonya	Confirms that his testimony is still accurate.
4:40:16 PM	No questions for Witness Early by Big Rivers or Kenergy.	
4:40:27 PM	Cross Examination of Witness Early by AG Atty. Hans.	
	Note: Harward, Sonya	Questioned about Century signing the contracts.
4:48:58 PM	AG Atty. Hans	
	Note: Harward, Sonya	Questioned about who at Century has the right to sign the contracts.
4:52:44 PM	AG Atty. Hans	
	Note: Harward, Sonya	Would Century sign the contracts if the Commission makes any changes?
4:53:32 PM	Cross Examination of Witness Early by KIUC Atty. Kurtz.	
	Note: Harward, Sonya	Questioning about live line maintenance.
4:58:39 PM	Session Paused	
5:00:57 PM	Session Resumed	
5:01:02 PM	Camera Lock Deactivated	
5:01:03 PM	Session Paused	
5:01:23 PM	Session Resumed	
5:05:30 PM	Cross Examination of Witness Early by KIUC Atty. Kurtz.- continued	
	Note: Harward, Sonya	Witness states contract is tightly negotiated package and adding contingencies adds risk. Witness states he wants contract to work and believes Century's proposal meets the fair, just and reasonable standard.
	Note: Harward, Sonya	Questions about contract if approved by PSC. Witness states wtihout contract Century will close. Questions about contract contingencies, i.e., appeal, 60-day notice. Witness states Century is unlike any other entity.
	Note: Harward, Sonya	Continued questions re: SSR. Net incrimental costs - agree with Mr. Berry?
	Note: Harward, Sonya	Question re: live-wire maintenance. Witness states that operational risk without live-wire maintenance becomes dramatic.

5:13:55 PM	Cross Examination by PSC Atty. Raff	
	Note: Harward, Sonya	Raff asked Early for his educational and employment background and expertise. Witness is responsible for managing power supply at domestic smelters of Century plus other smelters within the US. Witness was involved in all contract negotiations between Century and Big Rivers.
	Note: Harward, Sonya	Questions re: Century's willingness to sign contract should changes by made by commission. Raff states that Berry testified that live-line maintenance was raised two days before signing of contract after 8 months of negotiations. Witness states that's incorrect.
	Note: Harward, Sonya	Questions re: Did Big Rivers indicate a willingness to consider live-line maintenance? No. Big Rivers' response is consistent with what's contained in their rebuttal testimony. Does Century have an agreement with Big Rivers that will allow it to continue after August? Yes, with the live-wire maintenance included in contract. Live-wire maintenance is a reasonable alternative to SSR. Is there an agreement between the parties?
	Note: Harward, Sonya	Testimony, Page 4, lines 3-5. Questions re: costs not born by any other Century customer.
	Note: Harward, Sonya	Exhibit 1 - questions regarding contract and notice of terminating service agreement at Hawesville smelter in 2009.
5:36:22 PM	Cross Examination by Vice Chairman Gardner	
	Note: Harward, Sonya	Does President's statement in June re: climate action impact MISO prices? Do you disagree with Big River's testimony that by 2019 the prices in MISO will be significantly higher that today's.
	Note: Harward, Sonya	Questions re: capital costs issues within contracts. Questions wheher the contract was tightly negotiated as stated previously. Is Century asking for the commission to approve a contract with live-wire requirement included? Question regarding differing dispute agreement containted in contracts. Question re: termination letter and witness's involvement. Did Century do any modeling on future MISO energy pricing and what was the modeling horizon?
	Note: Harward, Sonya	Question about Century's position on live-wire maintenance and SSR. What happens in May 2014 that would prevent Century from going forward? Is live-wire maintenance necessary for MISO/SERC, or is it necessary for Century?
5:56:44 PM	Cross Examination by Commissioner Breathitt	
	Note: Harward, Sonya	Refering to Staff Cross - Live line maintenance. Why does witness believe Big River's would oppose that feature? Commissioner Breathitt handed out material picked up at MISO.
	Note: Harward, Sonya	Question about Century securing bilateral contract.
5:59:44 PM	Exhibit 2 - PSC	
	Note: Harward, Sonya	MISO At-a-Glance July 2013
6:00:26 PM	Cross Examination by Commissioner Breathitt - continued	
	Note: Harward, Sonya	PSC Exhibit 2: Question re: Environmental Compliance under "Welcome". Question re: pages 2 and 3.
	Note: Harward, Sonya	Question about capacitors and installation date.
6:05:19 PM	Cross Examination by Chairman Armstrong	
	Note: Harward, Sonya	Does witness understand why MISO has put Big Rivers in SSR? Comments concerning SERC's role.
6:08:18 PM	Re-Direct by Century Atty. Weishaar	
	Note: Harward, Sonya	Direct testimony - Page 12, lines 15-22. Is Century prepared to execute the contracts?

6:09:37 PM	Cross Examination by PSC Atty. Raff	
	Note: Harward, Sonya	Refer to DirectTestimony - page 12. Question re: who makes the decision to enter into the agreement. When does Century intend to be off the SSR? Are you asking the PSC to order Big Rivers to enter into the contracts that are filed here that involve Big Rivers?
6:14:19 PM	Witness Early is dismissed.	
6:14:29 PM	Break	
6:15:47 PM	Session Paused	
6:18:34 PM	Session Resumed	
6:19:34 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Comments re: filed testimony requesting an issuance of an order on August 19 and the procedural schedule.
6:19:46 PM	Camera Lock Deactivated	
6:20:52 PM	POST HEARING REQUEST confirmed.	
	Note: Harward, Sonya	Century regarding average market price for smelters. Will provide in 2 days.
6:21:25 PM	POST HEARING REQUEST confirmed.	
	Note: Harward, Sonya	AG's request - Date of deadline for seeking the MATS extension - Will provide in 2 days.
6:22:15 PM	Century Atty. Weishaar	
	Note: Harward, Sonya	Brief issue - Request to dispense with briefs altogether.
6:23:10 PM	PSC Atty. Raff	
	Note: Harward, Sonya	First notice of August 13 deadline for Order.
6:23:13 PM	Camera Lock Camera 8 Activated	
6:23:50 PM	Century Atty. Weishaar	
	Note: Harward, Sonya	Discussing the need for Order by Aug. 13.
6:23:57 PM	Camera Lock Deactivated	
6:24:08 PM	PSC Atty. Raff	
	Note: Harward, Sonya	Move Brief due date to August 5.
6:24:28 PM	Chairman Armstrong	
	Note: Harward, Sonya	August 5, page limit of 20 for briefs. All parties agree.
6:25:12 PM	Hearing is adjourned	
6:25:33 PM	Session Paused	
8:45:52 AM	Session Ended	

Exhibit List Report

2013-00221-30-July-2013

Kenergy Corp. and Big Rivers Electric Corp.

Name:	Description:
Exhibit 1 - AG	Direct Testimony of Larry W. Holloway, P.E.
Exhibit 1 - Big Rivers	Attachment Y Study Report, July 18, 2013
Exhibit 1 - KIUC	Big Rivers Electric Corporation, Cost of Service Study, Estimate of Retail Rate Increase, 12 Months Ended Jan. 31, 2015.
Exhibit 1 - PSC	Letter to Mark Bailey, Big Rivers, and Michael Bless, Century, dated 2/20/13, from Steven Brashear.
Exhibit 2 - KIUC	CN 2012-00535, Big Rivers Forecasted Test Period Filing Requirements, Tab No. 59, Witness Billie Richert.
Exhibit 2 - PSC	MIS At-A-Glance, July 2013

BIG RIVERS ELECTRIC CORPORATION
Cost of Service Study
Estimate of Retail Rate Increase

12 Months Ended
January 31, 2015

Rural Delivery Service		Current	Proposed	Increase	Increase
Estimated Retail Rate ($/kWh)					
All-In Wholesale Rate		0.077800	0.101566	0.023766	30.5%
Estimated Retail Distr Cost Adder		0.033000	0.033000		
Total Retail Rate Estimate		0.110800	0.134566	0.023766	21.4%
Estimated Billings ($/Month)					
Monthly Usage	100 kWh	$ 11.08	$ 13.46	$ 2.38	21.5%
	200	$ 22.16	$ 26.91	$ 4.75	21.4%
	300	$ 33.24	$ 40.37	$ 7.13	21.5%
	400	$ 44.32	$ 53.83	$ 9.51	21.5%
	500	$ 55.40	$ 67.28	$ 11.88	21.4%
	600	$ 66.48	$ 80.74	$ 14.26	21.5%
	700	$ 77.56	$ 94.20	$ 16.64	21.5%
	800	$ 88.64	$ 107.65	$ 19.01	21.4%
	900	$ 99.72	$ 121.11	$ 21.39	21.5%
	1000	$ 110.80	$ 134.57	$ 23.77	21.5%
	1100	$ 121.88	$ 148.02	$ 26.14	21.4%
	1200	$ 132.96	$ 161.48	$ 28.52	21.5%
	1300	$ 144.04	$ 174.94	$ 30.90	21.5%
	1400	$ 155.12	$ 188.39	$ 33.27	21.4%
	1500	$ 166.20	$ 201.85	$ 35.65	21.5%

Large Industrial Customer Service					
Estimated Retail Rate ($/kWh)					
All-In Wholesale Rate		0.061270	0.077068	0.015798	25.8%
Estimated Retail Distribution Cost Adder		0.002000	0.002000		
Total Retail Rate Estimate		0.063270	0.079068	0.015798	25.0%
Estimated Billings ($/Month)					
Monthly Usage	500 kWh	$ 31.63	$ 39.53	$ 7.90	25.0%
	600	$ 37.96	$ 47.44	$ 9.48	25.0%
	700	$ 44.29	$ 55.35	$ 11.06	25.0%
	800	$ 50.62	$ 63.25	$ 12.64	25.0%
	900	$ 56.94	$ 71.16	$ 14.22	25.0%
	1000	$ 63.27	$ 79.07	$ 15.80	25.0%
	1100	$ 69.60	$ 86.98	$ 17.38	25.0%
	1200	$ 75.92	$ 94.88	$ 18.96	25.0%
	1300	$ 82.25	$ 102.79	$ 20.54	25.0%
	1400	$ 88.58	$ 110.70	$ 22.12	25.0%
	1500	$ 94.90	$ 118.60	$ 23.70	25.0%
	1600	$ 101.23	$ 126.51	$ 25.28	25.0%
	1700	$ 107.56	$ 134.42	$ 26.86	25.0%
	1800	$ 113.89	$ 142.32	$ 28.44	25.0%
	1900	$ 120.21	$ 150.23	$ 30.02	25.0%
	2000	$ 126.54	$ 158.14	$ 31.60	25.0%

Case No. 2013-00199
Exhibit Wolfram-7
Page 1 of 1

KIUC EXHIBIT ___/___

U.S. Energy Information Administration - Average Retail Price of Electricity in 2011

RESIDENTIAL

#	Entity	State	Class of Ownership	Avg. ¢/kWh
1	Henderson City Utility Comm	KY	Public	6.13
2	**Jackson Purchase Energy Corporation**	KY	**Cooperative**	7.07
3	City of Benham	KY	Public	7.28
4	City of Falmouth	KY	Public	7.35
5	**Kenergy Corp**	KY	**Cooperative**	7.46
6	City of Nicholasville	KY	Public	7.50
7	**Meade County Rural E C C**	KY	**Cooperative**	7.53
8	City of Frankfort - (KY)	KY	Public	7.62
9	City of Berea Municipal Utility	KY	Public	7.73
10	City of Bardstown	KY	Public	7.75
11	City of Bardwell	KY	Public	7.89
12	Kentucky Utilities Co	KY	Investor Owned	8.02
13	Duke Energy Kentucky	KY	Investor Owned	8.39
14	Barbourville Utility Comm	KY	Public	8.58
15	Louisville Gas & Electric Co	KY	Investor Owned	8.60
16	Corbin City Utilities Comm	KY	Public	8.75
17	Madisonville Municipal Utils	KY	Public	8.83
18	City of Paris - (KY)	KY	Public	8.89
19	City of Olive Hill - (KY)	KY	Public	9.32
20	Salt River Electric Coop Corp	KY	Cooperative	9.39
21	Taylor County Rural E C C	KY	Cooperative	9.50
22	City of Providence - (KY)	KY	Public	9.51
23	City of Franklin - (KY)	KY	Public	9.53
	Big Rivers Total: Rural ~ NET of MRSM	**KY**	**Cooperative**	**9.56**
24	City of Paducah - (KY)	KY	Public	9.66
25	Kentucky Power Co	KY	Investor Owned	9.66
26	City of Russellville - (KY)	KY	Public	9.81
27	City of Owensboro - (KY)	KY	Public	9.84
28	City of Hopkinsville	KY	Public	9.85
29	Cumberland Valley Electric, Inc.	KY	Cooperative	9.92
30	Williamstown Utility Comm	KY	Public	10.01
31	City of Jellico	KY	Public	10.03
32	Nolin Rural Electric Coop Corp	KY	Cooperative	10.16
33	City of Glasgow	KY	Public	10.17
34	South Kentucky Rural E C C	KY	Cooperative	10.24
35	City of Murray - (KY)	KY	Public	10.31
36	Warren Rural Elec Coop Corp	KY	Cooperative	10.32
37	Tri-County Elec Member Corp	KY	Cooperative	10.33
38	Farmers Rural Electric Coop Corp	KY	Cooperative	10.35
39	Shelby Energy Co-op, Inc	KY	Cooperative	10.42
40	Owen Electric Coop Inc	KY	Cooperative	10.52
41	Blue Grass Energy Coop Corp	KY	Cooperative	10.62
42	Pennyrile Rural Electric Coop	KY	Cooperative	10.69
43	City of Fulton - (KY)	KY	Public	10.71
44	Big Sandy Rural Elec Coop Corp	KY	Cooperative	10.72
45	Fleming-Mason Energy Coop Inc	KY	Cooperative	10.75
46	City of Bowling Green - (KY)	KY	Public	10.84
47	City of Benton - (KY)	KY	Public	10.95
48	Clark Energy Coop Inc - (KY)	KY	Cooperative	11.00
49	Inter County Energy Coop Corp	KY	Cooperative	11.00
50	Licking Valley Rural E C C	KY	Cooperative	11.21
51	City of Mayfield Plant Board	KY	Public	11.29
52	City of Vanceburg	KY	Public	11.58
53	West Kentucky Rural E C C	KY	Cooperative	11.62
54	City of Princeton - (KY)	KY	Public	11.66
55	Jackson Energy Coop Corp - (KY)	KY	Cooperative	11.66
56	City of Hickman	KY	Public	11.67
57	Grayson Rural Electric Coop Corp	KY	Cooperative	12.37
58	Hickman-Fulton Counties RECC	KY	Cooperative	13.01
	Big Rivers Total: Rural ~ GROSS of MRSM	**KY**	**Cooperative**	**13.46**

Source: http://www.eia.gov/electricity/data.cfm#sales

U.S. Energy Information Administration: Average Retail Price of Electricity in 2011

INDUSTRIAL

#	Entity	State	Class of Ownership	Avg. ¢/kWh
1	**Kenergy Corp**	KY	**Cooperative**	4.14
2	Electric Energy Inc	KY	Investor Owned	4.27
3	Corbin City Utilities Comm	KY	Public	4.62
4	Tennessee Valley Authority	KY	Federal	4.76
	Big Rivers Total: Large Industrial ~NET of MRSM	**KY**	**Cooperative**	**4.96**
5	City of Bardstown	KY	Public	5.07
6	Henderson City Utility Comm	KY	Public	5.08
7	Owen Electric Coop Inc	KY	Cooperative	5.28
8	Williamstown Utility Comm	KY	Public	5.52
9	Kentucky Utilities Co	KY	Investor Owned	5.66
10	**Jackson Purchase Energy Corporation**	**KY**	**Cooperative**	**5.89**
11	Louisville Gas & Electric Co	KY	Investor Owned	5.98
12	City of Hopkinsville	KY	Public	5.99
13	Kentucky Power Co	KY	Investor Owned	6.03
14	Fleming-Mason Energy Coop Inc	KY	Cooperative	6.16
15	Nolin Rural Electric Coop Corp	KY	Cooperative	6.18
16	City of Nicholasville	KY	Public	6.41
17	Grayson Rural Electric Coop Corp	KY	Cooperative	6.47
18	City of Frankfort - (KY)	KY	Public	6.64
19	Blue Grass Energy Coop Corp	KY	Cooperative	6.68
20	Duke Energy Kentucky	KY	Investor Owned	6.70
21	Shelby Energy Co-op, Inc	KY	Cooperative	6.71
22	Salt River Electric Coop Corp	KY	Cooperative	6.77
23	City of Berea Municipal Utility	KY	Public	6.78
24	Big Sandy Rural Elec Coop Corp	KY	Cooperative	6.84
25	Barbourville Utility Comm	KY	Public	6.91
26	City of Franklin - (KY)	KY	Public	7.13
27	Inter County Energy Coop Corp	KY	Cooperative	7.13
28	City of Owensboro - (KY)	KY	Public	7.19
29	Jackson Energy Coop Corp - (KY)	KY	Cooperative	7.30
30	Farmers Rural Electric Coop Corp	KY	Cooperative	7.43
31	City of Murray - (KY)	KY	Public	7.61
32	West Kentucky Rural E C C	KY	Cooperative	7.81
33	Licking Valley Rural E C C	KY	Cooperative	7.90
	Big Rivers Total: Large Industrial ~GROSS of MRSM	**KY**	**Cooperative**	**7.91**
34	Tri-County Elec Member Corp	KY	Cooperative	7.98
35	City of Glasgow	KY	Public	8.01
36	Cumberland Valley Electric, Inc.	KY	Cooperative	8.02
37	Pennyrile Rural Electric Coop	KY	Cooperative	8.15
38	Warren Rural Elec Coop Corp	KY	Cooperative	8.19
39	City of Bowling Green - (KY)	KY	Public	8.23
40	South Kentucky Rural E C C	KY	Cooperative	8.35
41	Clark Energy Coop Inc - (KY)	KY	Cooperative	8.57
42	City of Paris - (KY)	KY	Public	8.61
43	City of Russellville - (KY)	KY	Public	9.01
44	City of Fulton - (KY)	KY	Public	9.16
45	City of Vanceburg	KY	Public	9.27
46	Taylor County Rural E C C	KY	Cooperative	9.42
47	City of Benton - (KY)	KY	Public	9.45
48	City of Mayfield Plant Board	KY	Public	9.57
49	City of Paducah - (KY)	KY	Public	9.63
50	City of Princeton - (KY)	KY	Public	10.75
51	Hickman-Fulton Counties RECC	KY	Cooperative	12.67

U.S. Energy Information Administration - Average Retail Price of Electricity in 2011

RESIDENTIAL

#	State	Avg. ¢/kWh
1	Idaho	7.87
2	Washington	8.28
3	North Dakota	8.58
4	Louisiana	8.96
5	Utah	8.96
6	Arkansas	9.02
7	Wyoming	9.11
8	**Kentucky**	**9.20**
9	Nebraska	9.32
	Kentucky with Big Rivers NET Increase	**9.33**
10	South Dakota	9.35
11	West Virginia	9.39
12	Oklahoma	9.47
13	Oregon	9.54
	Kentucky with Big Rivers GROSS Increase	**9.55**
14	Missouri	9.75
15	Montana	9.75
16	Tennessee	9.98
17	Indiana	10.06
18	Mississippi	10.17
19	North Carolina	10.26
20	Iowa	10.46
21	Virginia	10.64
22	Kansas	10.65
23	Minnesota	10.96
24	New Mexico	11.00
25	Georgia	11.05
26	South Carolina	11.05
27	Texas	11.08
28	Arizona	11.08
29	Alabama	11.09
30	Colorado	11.27
31	Ohio	11.42
32	Florida	11.51
33	Nevada	11.61
34	Illinois	11.78
35	Wisconsin	13.02
36	Pennsylvania	13.26
37	Michigan	13.27
38	Maryland	13.31
39	District of Columbia	13.40
40	Delaware	13.70
41	Rhode Island	14.33
42	Massachusetts	14.67
43	California	14.78
44	Maine	15.38
45	New Jersey	16.23
46	Vermont	16.26
47	New Hampshire	16.52
48	Alaska	17.62
49	Connecticut	18.11
50	New York	18.26
51	Hawaii	34.68

Source: http://www.eia.gov/electricity/data.cfm#sales

U.S. Energy Information Administration - Average Retail Price of Electricity in 2011

INDUSTRIAL

#	State	Avg. ¢/kWh
1	Washington	4.09
2	Idaho	5.10
3	Utah	5.10
4	Iowa	5.21
5	Montana	5.27
6	**Kentucky**	**5.33**
7	Wyoming	5.41
8	Oklahoma	5.46
9	Oregon	5.47
	Kentucky with Big Rivers NET Increase	**5.49**
10	Arkansas	5.63
11	Louisiana	5.69
12	Missouri	5.85
13	South Carolina	5.94
14	North Carolina	6.01
	Kentucky with Big Rivers GROSS Increase	**6.05**
15	New Mexico	6.06
16	Ohio	6.12
17	Indiana	6.17
18	West Virginia	6.18
19	South Dakota	6.20
20	North Dakota	6.24
21	Texas	6.24
22	Alabama	6.25
23	Illinois	6.42
24	Nebraska	6.43
25	Minnesota	6.47
26	Virginia	6.49
27	Mississippi	6.53
28	Arizona	6.55
29	Georgia	6.60
30	Nevada	6.65
31	Kansas	6.71
32	District of Columbia	6.89
33	Colorado	7.06
34	Tennessee	7.23
35	Michigan	7.32
36	Wisconsin	7.33
37	Pennsylvania	7.73
38	New York	7.83
39	Florida	8.55
40	Maryland	8.76
41	Maine	8.88
42	Delaware	8.91
43	Vermont	9.83
44	California	10.11
45	Rhode Island	11.27
46	New Jersey	11.43
47	New Hampshire	12.27
48	Connecticut	13.24
49	Massachusetts	13.38
50	Alaska	15.71
51	Hawaii	28.40

Source: http://www.eia.gov/electricity/data.cfm#sales

Big Rivers Electric Corporation
Case No. 2012-00535
Forecasted Test Period Filing Requirements
(*Forecast Test Year 12ME 08/31/2014; Base Period 12ME 04/30/2013*)

Tab No. 59
Filing Requirement
807 KAR 5:001 Section 10(10)(m)
Sponsoring Witness: Billie J. Richert

Description of Filing Requirement:

Revenue summary for both base and forecasted periods with supporting schedules which provide detailed billing analyses for all customer classes.

Response:

The base period revenue summary, which includes detailed billing analyses for all customer classes, is included on pages 1 through 4 of the attachment to this response.

The forecasted period revenue summary, which includes detailed billing analyses for all customer classes, is included on pages 5 through 8 of the attachment to this response.

KIUC EXHIBIT 2

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Base Period 12ME - April 30, 2013

Base Year 5/1/2012 - 4/30/2013

Revenue Summary

		Total Base Year Revenue (000s)
Rural	$	124,786
Large Industrial		45,927
Smelter		363,712
Total	$	534,425

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Base Period 12ME - April 30, 2013

Billing Analysis Base Year
Actual Billing Determinants and Revenue 5/1/2012 - 10/31/2012
Forecasted Billing Determinants and Revenue 11/1/2012 - 12/31/2012
Budgeted Billing Determinants and Revenue 1/1/2013 - 4/30/2013

Smelter Rate	Billing Units		Rate	Revenue $
Base Fixed Energy (kWh)	7,325,304,000	$	0.039405	$ 288,655,720
Base Variable Energy	34,591,103		0.021806	754,294
Back-Up Energy	12,573,778		0.039529	497,024
Surplus Energy	(2,493,184)		0.034709	(86,535)
Supplemental Energy	217,000		0.030114	6,535
TIER Adjustment	7,325,304,000		0.002942	21,550,670
Non-FAC PPA	7,359,895,103		(0.000505)	(3,714,688)
FAC	7,359,895,103		0.003492	25,702,084
Environmental Surcharge	7,359,895,103		0.002263	16,652,656
Surcharge	7,359,895,103		0.001860	13,690,361
Adjustment				4,276
Rate ($/kWh)		$	0.049349	$ 363,712,397

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Base Period 12ME - April 30, 2013

Billing Analysis Base Year
Actual Billing Determinants and Revenue 5/1/2012 - 10/31/2012
Forecasted Billing Determinants and Revenue 11/1/2012 - 12/31/2012
Budgeted Billing Determinants and Revenue 1/1/2013 - 4/30/2013

Rural Rate	Billing Units		Rate		Billing $		Revenue $
Demand (kW)	5,388,931	$	9.50	$	51,194,844	$	51,194,844
Energy (kWh)	2,420,925,805		0.029736		71,988,650		71,988,650
Base Rate ($/kWh)	2,420,925,805	$	0.050883	$	123,183,494	$	123,183,494
Non-Smelter Non-FAC PPA	2,420,925,805	$	(0.001242)	$	(3,006,668)	$	(3,006,668)
FAC	2,420,925,805		0.003480		8,423,690		8,423,690
Environmental Surcharge	2,420,925,805		0.002534		6,135,605		6,135,605
Surcredit	2,420,925,805		(0.004110)		(9,950,155)		(9,950,155)
Economic Reserve	2,420,925,805		(0.006442)		(15,596,792)		
Rate ($/kWh)		$	0.045103	$	109,189,174	$	124,785,966

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Base Period 12ME - April 30, 2013

Billing Analysis Base Year
Actual Billing Determinants and Revenue 5/1/2012 - 10/31/2012
Forecasted Billing Determinants and Revenue 11/1/2012 - 12/31/2012
Budgeted Billing Determinants and Revenue 1/1/2013 - 4/30/2013

Large Industrial Rate	Billing Units	Rate	Billing $	Revenue $
Demand (kW)	1,700,070	$ 10.50	$ 17,850,735	$ 17,850,735
Energy (kWh)	953,161,521	0.024505	23,357,223	23,357,223
Base Rate ($/kWh)	953,161,521	$ 0.043233	$ 41,207,958	$ 41,207,958
Non-Smelter Non-FAC PPA	953,161,521	$ (0.001249)	$ (1,190,856)	$ (1,190,856)
FAC	953,161,521	0.003490	3,326,542	3,326,542
Environmental Surcharge	953,161,521	0.006866	6,544,658	6,544,658
Surcredit	953,161,521	(0.004156)	(3,961,493)	(3,961,493)
Economic Reserve	953,161,521	(0.010744)	(10,240,683)	
Rate ($/kWh)		$ 0.037440	$ 35,686,126	$ 45,926,809

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Forecasted Period 12ME - August 31, 2014
Forecasted Year 9/1/2013 - 8/31/2014
Revenue Summary

		Total Forecasted Year Revenue (000s)
Rural	$	179,193
Large Industrial		54,433
Smelter		189,502
Total	$	423,128

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Forecasted Period 12ME - August 31, 2014
Billing Analysis Forecasted Year
Budgeted Billing Determinants and Revenue 9/1/2013 - 8/31/2014

Smelter Rate	Billing Units		Rate		Revenue $
Base Fixed Energy (kWh)	3,159,206,400	$	0.047597	$	150,368,554
TIER Adjustment	3,159,206,400	$	0.002945	$	9,303,467
Non-FAC PPA	3,159,206,400		(0.000369)		(1,165,347)
FAC	3,159,206,400		0.005121		16,176,808
Environmental Surcharge	3,159,206,400		0.002818		8,905,812
Surcharge	3,159,206,400		0.001872		5,912,468
Rate ($/kWh)		$	0.059984	$	189,501,761

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Forecasted Period 12ME - August 31, 2014
Billing Analysis Forecasted Year
Budgeted Billing Determinants and Revenue 9/1/2013 - 8/31/2014

Rural Rate	Billing Units	Rate	Billing $	Revenue $
Demand (kW)	5,322,297	$ 16.95	$ 90,212,932	$ 90,212,932
Energy (kWh)	2,436,557,000	0.030000	73,096,710	73,096,710
Base Rate ($/kWh)	2,436,557,000	$ 0.067025	163,309,642	163,309,642
Non-Smelter Non-FAC PPA	2,436,557,000	$ (0.000781)	$ (1,903,467)	$ (1,903,467)
FAC	2,436,557,000	0.005141	12,526,275	12,526,275
Environmental Surcharge	2,436,557,000	0.003897	9,496,100	9,496,100
Surcredit	2,436,557,000	(0.001738)	(4,235,358)	(4,235,358)
Economic Reserve	2,436,557,000	(0.010114)	(24,642,915)	
Rate ($/kWh)		$ 0.063430	$ 154,550,277	$ 179,193,192

Big Rivers Electric Corporation
Case No. 2012-00535
Billing Determinants and Revenue
Forecasted Period 12ME - August 31, 2014
Billing Analysis Forecasted Year
Budgeted Billing Determinants and Revenue 9/1/2013 - 8/31/2014

Large Industrial Rate	Billing Units	Rate	Billing $	Revenue $
Demand (kW)	1,674,594	$ 12.41	$ 20,781,712	$ 20,781,712
Energy (kWh)	943,698,679	0.030000	28,310,960	28,310,960
Base Rate ($/ kWh)	943,698,679	$ 0.052022	49,092,672	49,092,672
Non-Smelter Non-FAC PPA	943,698,679	$ (0.000781)	$ (737,229)	$ (737,229)
FAC	943,698,679	0.005125	4,836,245	4,836,245
Environmental Surcharge	943,698,679	0.003092	2,918,280	2,918,280
Surcredit	943,698,679	(0.001777)	(1,677,110)	(1,677,110)
Economic Reserve	943,698,679	(0.009302)	(8,778,318)	
Rate ($/kWh)		$ 0.048379	$ 45,654,540	$ 54,432,858

COMMONWEALTH OF KENTUCKY
OFFICE OF THE GOVERNOR

STEVEN L. BESHEAR
GOVERNOR

700 CAPITOL AVENUE
SUITE 100
FRANKFORT, KY 40601
(502) 564-2611
FAX: (502) 564-2517

February 20, 2013

Mr. Mark Bailey
President & CEO
Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42419

Mr. Michael Bless
President & CEO
Century Aluminum
1627 State Hwy 271 N
Hawesville, KY 42348

Gentlemen:

For almost two years, my administration has engaged with both of your companies to find a resolution to the rate and cost issues affecting you. I have both directly, and through my staff, urged both parties to negotiate in good faith and work expeditiously to find a solution that would erode fears of rate increases and the potential for loss of employment.

I urge both Big Rivers Electric Corporation and Century Aluminum to craft a framework of compromise that will end the crisis of confidence in the security of affordable electricity and of continued employment that has been communicated to me from hundreds of phone calls, letters, emails, and faxes from rate payers, employees, and families.

Recently legislation has been filed in the state legislature which further seeks a political solution to a business problem. I urge you both to take responsibility and immediate action and come together to find a reasonable solution to save thousands of Kentucky jobs and bring peace of mind to thousands of Kentucky ratepayers.

Sincerely,

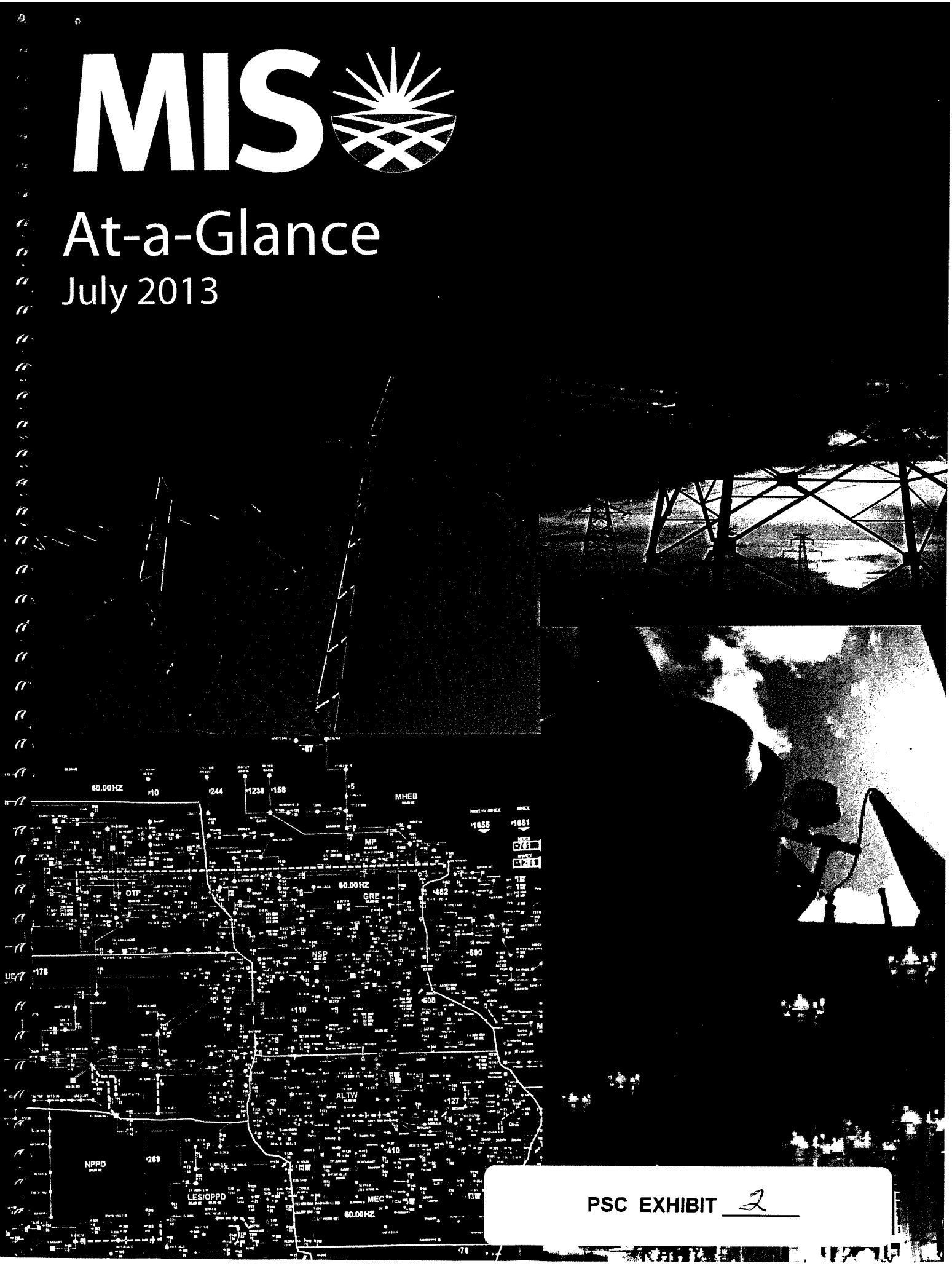
Steven L. Beshear

PSC EXHIBIT 1

MISO

At-a-Glance

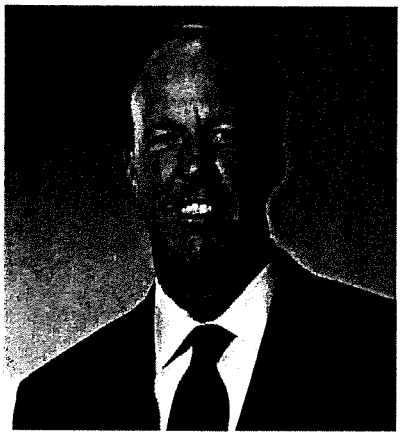
July 2013



PSC EXHIBIT 2

Welcome

from John R. Bear, President and CEO of MISO



Dear Friends of MISO:

As you know, there are several complex challenges which are converging. Economic recovery signals, environmental compliance uncertainty and risks to resource adequacy are some of the critical matters facing our industry. Taking a focused approach to strengthen our core business functions while balancing several of these key strategic initiatives has resulted in better stakeholder coordination, greater price transparency for regulators and improved reliability for members. Against this backdrop, we thank you for your continued support in working with us.

Regional Reliability - 2013 and Beyond

Refining our processes and improving our core services reflect a broader regional view that provides added value for our membership. Our focus for the remainder of 2013 and beyond will mitigate the impact of changes in the following critical areas:

- Energy Policy: We continue to analyze the impact of key policy changes associated with environmental regulations, transmission planning, increased compliance focus, and renewable mandates.

- Environmental Compliance: Shortfalls between 6-9 GW are expected in 2016 based on current analysis due to environmental compliance and routine outage scheduling, particularly during off-peak or shoulder periods. Greater transparency from utilities on generation and transmission outage plans will greatly aid MISO's regional situational awareness and ability to mitigate outages in non-shoulder periods.

- Portfolio Shift: MISO continues its outreach with generation owners, gas industry experts and policy makers to help reliably facilitate compliance with new Mercury and Air Toxics Standards (MATS). We continue to survey our members quarterly on their plans, and study and coordinate gas-electric interdependency analysis and the transition to gas-fired generation.

- South Region Integration: In the South Region, MISO is on target for full system integration in December 2013. We now provide our reliability coordination services for the region, and last month received unanimous approval to expand our balancing authority upon integration. This expanded and geographically diverse footprint will bring economic benefits to consumers with improved system reliability and generation diversity for all MISO members.

- Order 1000: MISO remains fully engaged with our neighbors to achieve the most efficient use of the transmission system through improved seams coordination and Order 1000 compliance. This month's interregional Order 1000 compliance filings reflect improved coordination, and the opportunities that still remain to address differing approaches to regional cost allocation.

look forward to continued collaboration with regulators and stakeholders as we respond to the challenges ahead nsuring continued focus on the lowest-cost delivered energy for all consumers throughout MISO.

Sincerely,

John R. Bear
President and CEO
Midcontinent Independent System Operator, Inc.

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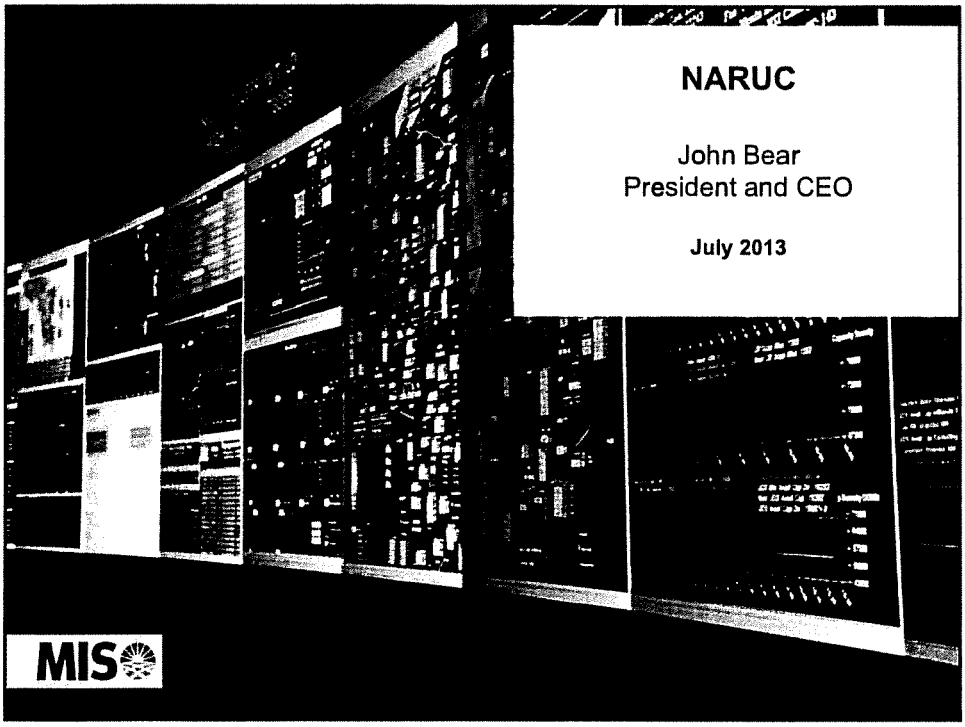


MISO region must work collaboratively, transparently and quickly to address resource adequacy risks

- MISO's generation fleet's composition and utilization is evolving rapidly
- Resource adequacy risks will persist for foreseeable future
  - Outage coordination period – Mercury and Air Toxic Standards (MATS) upgrades
  - Retirement Phase I – MATS compliance
  - Retirement Phase II – Proposed water/carbon regulations
- Forward transparency of plans is critical to mitigate risks.
- Load shedding is a shared risk in our "Mutual Insurance Pool" model

MISO 1

Many factors are influencing the evolution of the region's generation fleet

- Significant unit retirements, driven by:
  - Age
  - Environmental regulations
  - Economics
- Fuel costs, particularly natural gas prices
- Current and proposed future environmental regulations
  - MATS
  - Water
  - Carbon

These changes will result in reserve margin erosion and increased reliance on gas transport infrastructure designed for a different purpose.

The generation fleet's evolution increases resource adequacy risks in three distinct periods

	Environmental Compliance Phase Now- 2015	Retirement Phase I 2016 - 2017	Retirement Phase II 2018 and beyond
Nature of Risks	• 40 GW of coal units will require outages to implement upgrades • Increase reliance on gas fired generation and underlying gas infrastructure	• Significant generation retirements • Insufficient reserve margins • Risk of load shedding • Increased reliance on natural gas	• Proposed water/carbon regulations drive additional capacity retirements
Mitigation Efforts	• Collaboration with Asset Owners to reliably sequence outages • Collaboration with adjacent RTOs and others on outage management and seams operations • Collaboration with gas industry to improve reliability of integrated operation	• Improve transparency of Load Serving Entity (LSE) and state plans - Specific unit reliance - Forward view • Increased collaboration - State regulators - LSEs - Asset Owners - Natural Gas Industry • Drill emergency procedures, including load shed processes	• Increased transparency of plans and impacts

MISO is collaborating with various parties to maximize preparedness for the coming challenges

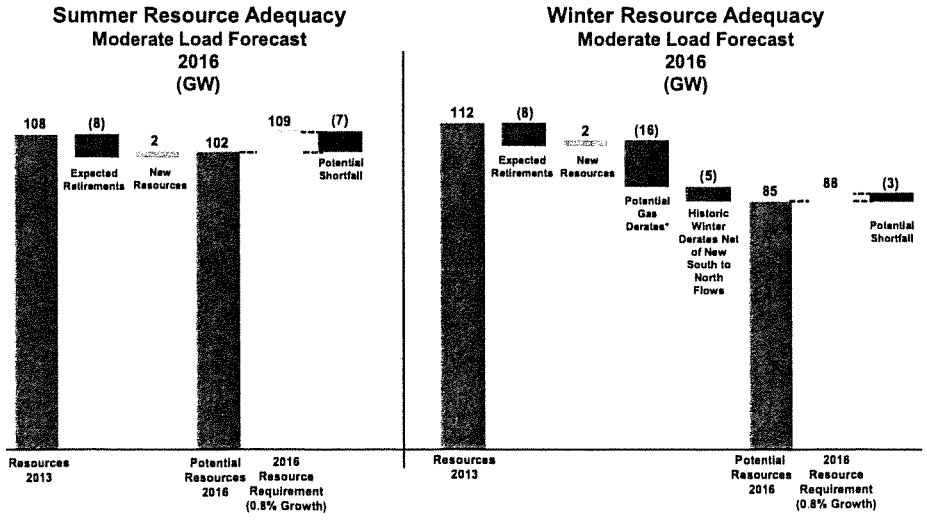
- MISO surveying Load Serving Entities quarterly regarding their plans to comply with environmental regulations.
- MISO partnering with state regulators to perform resource assessment for the near-term period.
- MISO collaborating with the natural gas industry and stakeholder communities to explore improvements in gas-electric coordination.
- MISO remains focused on interregional deliverability to maximize flexibility and improve reliability.

The outlook derived from these efforts contains uncertainty, but is currently the best information we have to plan from…

MISO

4

Forecast 2016 resource adequacy is very tight under a moderate (50/50) load forecast scenario



*Units without firm gas transport or distillate backup

MISO

5

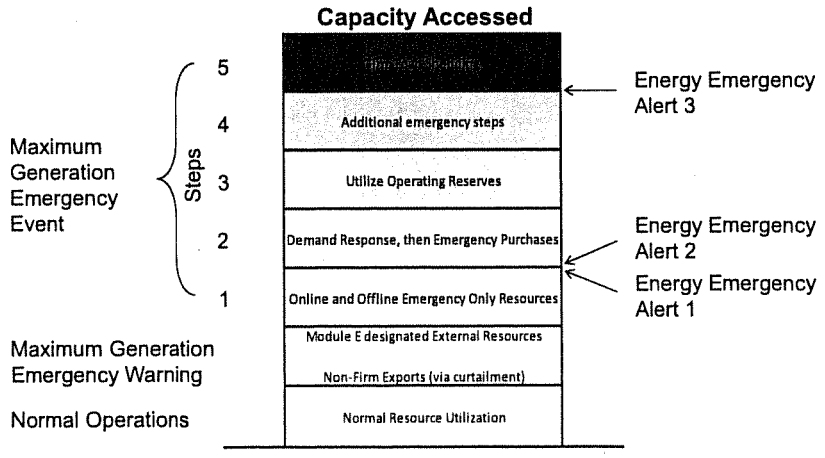
Limited options remain to mitigate the potential 2016 shortfall

- Planning Horizon
  - Window narrowing for new capacity additions - likely limited to current site expansion
- Operating Horizon
  - Heavy reliance on demand side resources
  - Emergency purchases from neighboring entities where available
  - Load shed as a last resort

The lack of a complete supply picture in the immediate future puts longer-lead solutions at risk

MISO 6

Tight or inadequate supply in real-time requires MISO to initiate it's Capacity Emergency Procedure to gain access to certain resources



MISO 7

More engagement is needed to improve regional visibility and achieve clarity

- Improved transparency into Load Serving Entities plans would allow for a complete assessment of reliability risk.
  - Partial or non-responses are limiting clarity in terms of retirement levels and outage timing.
- State agreement on regional roles is necessary to allow these challenges, including prevention of overbuilding, to be addressed in a timely and effective manner.
- Continued collaboration between the electric and natural gas industries is critical to fully understand and minimize fuel supply risk for gas-fired resources.

MISO 8

MISO region must work collaboratively, transparently and quickly to address resource adequacy risks

- MISO's generation fleet's composition and utilization is evolving rapidly
- Resource adequacy risks will persist for foreseeable future
  - Outage coordination period – Mercury and Air Toxic Standards (MATS) upgrades
  - Retirement Phase I – MATS compliance
  - Retirement Phase II – Proposed water/carbon regulations
- Forward transparency of plans is critical to resolution
- Load shedding is a shared risk in our "Mutual Insurance Pool" model

MISO 9

Attachment Y Study
Coleman Units 1, 2 & 3: 443 MW Coal
28 Month Suspension 9/01/2013 – 1/1/2016

ATTACHMENT Y STUDY REPORT

July 18, 2013

DRAFT

PUBLIC/REDACTED

BIG RIVERS EXHIBIT 1

EXECUTIVE SUMMARY

The completed Attachment Y Notification of Potential Generation Resource/SCU change of Status (Attachment Y Notice) submitted by Big Rivers Electric Cooperation (BREC) on May 24, 2013. The request was for suspension of units 1, 2 & 3 from September 1, 2013 to January1, 2016.

After being reviewed for Transmission System reliability impacts as provided for under Section 38.2.7 of the MISO Open Access Transmission, Energy and Operating Reserve Markets Tariff (Tariff), MISO determined that potential reliability issues exist that would require the need for Coleman Units 1, 2 and 3 to enter into an System Support Resource (SSR) Agreement if a mitigation plan is not developed and implemented prior to the potential unit change of status.

Contents

I. INTRODUCTION

The completed Attachment Y Notification of Potential Generation Resource/SCU change of Status (Attachment Y Notice) submitted by Big Rivers Electric Cooperation (BREC) on May 24, 2013. The request was for suspension of units 1, 2 & 3 from September 1, 2013 to January 1, 2016.

After being reviewed for Transmission System reliability impacts as provided for under Section 38.2.7 of the MISO Open Access Transmission, Energy and Operating Reserve Markets Tariff (Tariff), MISO determined that potential reliability issues exist that would require the need for Coleman Units 1, 2 and 3 to enter into an System Support Resource (SSR) Agreement if a mitigation plan is not developed and implemented prior to the potential unit change of status.

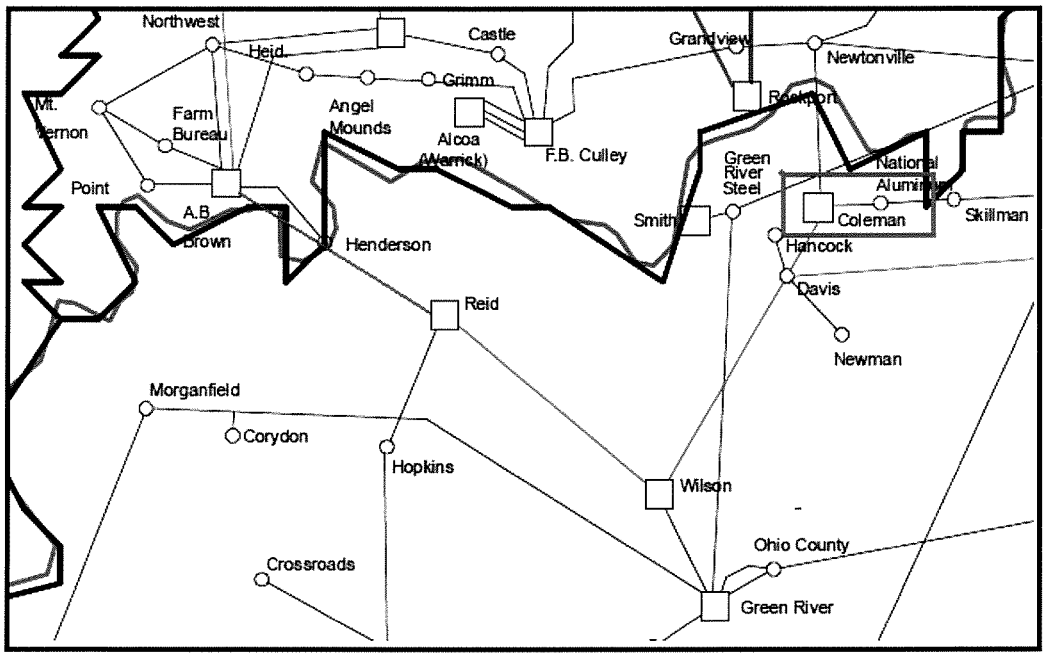


Figure 1: General Location of the Coleman Plant in Northern Kentucky

II. STUDY OBJECTIVES

The purpose of this study was to assess the reliability impacts from the suspension of the Coleman Station coal generation located in Hawesville, Kentucky. The operator of the Coleman generating station, Big Rivers Electric Cooperation (BRPS), submitted an Attachment Y notification to MISO for the consideration of suspending the generating station effective from September 1, 2013 to January 1, 2016.

III. MODELS AND ASSUMPTIONS

Corresponding to the anticipated suspension of the Coleman Units 1, 2, & 3 the following power system analysis source models were used for the study:

- 2014 Summer Peak
- 2014 Summer Peak with Stressed 2000MW MISO – TVA transfer
- 2017 Summer Peak
- 2017 Shoulder

The Attachment Y study models were created following the MISO Transmission Planning Business Practice Manual (BPM-020-r8) Section 6.2.2. This includes creating a set of models from each source model in which the units being studied are at full generation or taken out of service.

a. Model Assumptions

1. Load Sensitivity to Century Aluminium Plant (485 MW)

b. Transmission Projects

1. LGEE / KU Matanzas 161 kV Substation The new Matanzas 161 kV Substation has an anticipated in-service date of December 1, 2012. This new substation will be included in the 2014 and 2017 models since the substation will be in-service during the time Coleman Generation is unavailable.

c. Table of Models

n	Model	Coleman 1,2,3	Century Aluminum	Contingency Categories
1	2014SP	off	off	B, C1, C2, C5
2	2014SP	off	on	B, C1, C2, C5
3	2014SP	on	off	B, C1, C2, C5
4	2014SP	on	on	B, C1, C2, C5
5	2017SH	off	off	B, C1, C2, C3, C5
6	2017SH	off	on	B, C1, C2, C3, C5
7	2017SH	on	off	B, C1, C2, C3, C5
8	2017SH	on	on	B, C1, C2, C3, C5
9	2017SP	off	off	B, C1, C2, C5
10	2017SP	off	on	B, C1, C2, C5
11	2017SP	on	off	B, C1, C2, C5
12	2017SP	on	on	B, C1, C2, C5
13	2014SP Stressed	on	on	B, C1, C2, C5
14	2014SP Stressed	off	on at 338MW, with 200MVar cap bank at Coleman 161kV bus	B, C1, C2, C5

IV. STUDY CRITERIA AND METHODOLOGY

Siemens PTI's Power System Simulator for Engineering (PSS/E) and Managing and Utilizing System Transmission (MUST) were used to perform AC contingency analysis.

Two phases of study have been studied. In phase 1, the system impact of Coleman generating units were evaluated by comparing the contingency analysis study result of the before Coleman suspension and after Coleman suspension case. The models were solved with automatic control of Load Tap Changers (LTCs), phase shifters, DC taps, switched shunts enabled (regulating), and area interchange disabled. The results are compared to determine if there were any criteria violations due to the change in the status for the unit(s).

Since reliability issues have been identified in Phase 1 study, and Coleman Units are identified as required SSR units, Phase 2 study was performed to evaluate the potential alternative to mitigate the reliability issue caused by Coleman generating units' suspension. In this case, the potential reduction of Century Load was evaluated.

a. Applicable Transmission Planning Criteria

MISO Transmission Owners

AMIL Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for AMIL System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for AMIL System

AMIL Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, all substation voltages less than 95% or above 105%
- For Category B and C contingencies, all substation voltages less than 90% or above 110%

BREC Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for BREC System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for BREC System

BREC Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, all substation voltages less than 95% or above 105%
- For Category B and C contingencies, all substation voltages less than 92% or above 105%

DEI Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for DEI System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for BREC System

DEI Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, >100 kV substation voltages less than 95% or above 105%
- For Category B and C contingencies, >100 kV substation voltages less than 90% or above 105%

HE Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for HE System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for HE System

HE Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, >100 kV substation voltages less than 95% or above 105%
- For Category B and C contingencies, >100 kV substation voltages less than 90% or above 110%

SIGE Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for SIGE System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for SIGE System

SIGE Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, >100 kV substation voltages less than 95% or above 105%
- For Category B and C contingencies, >100 kV substation voltages less than 95% or above 105%

SIPC Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for SIGE System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for SIGE System

SIPC Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, >100 kV substation voltages less than 91% or above 105%
- For Category B and C contingencies, >100 kV substation voltages less than 91% or above 105%

Non–MISO Transmission Owners

LGEE Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for LGEE System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for LGEE System

LGEE Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, >100 kV substation voltages less than 95% or above 105%
- For Category B and C contingencies, >100 kV substation voltages less than 90% or above 110%

TVA Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for TVA System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for TVA System

TVA Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, >100 kV substation voltages less than 95% or above 105%
- For Category B and C contingencies, >100 kV substation voltages less than 90% or above 110%

AECI Transmission Planning Criteria applied for the thermal analysis:

- For Category A contingencies, all thermal loadings exceeding 100% of the normal rating for AECI System
- For Category B and C contingencies, all thermal loadings exceeding 100% of the emergency rating for AECI System

AECI Transmission Planning Criteria applied for the voltage analysis:

- For Category A contingencies, >100 kV substation voltages less than 95% or above 105%
- For Category B and C contingencies, >100 kV substation voltages less than 90% or above 110%

Under category C contingencies, for the valid thermal and voltage violations as specified above, generation re-dispatch, system reconfiguration, and/or load shedding will be considered if applicable.

b. MISO Transmission Planning BPM - SSR Criteria

As specified in MISO BPM-020-r7, the SSR criteria for determining if an identified facility is impacted by the generator's change of status will be:

- Under system intact and contingent events, branch thermal violations are only valid if the flow increase on the element in the "after" retirement scenario is equal to or greater than:
  a) 5% of the "to-be-retired" unit(s) MW amount (i.e. 5% Power Transfer Distribution Factor (PTDF)) for a "base" violation compared with the "before" retirement scenario, or
  b) 3% of the "to-be-retired" unit(s) amount (i.e. 3% Outage Transfer Distribution Factor (OTDF)) for a "contingency" violation compared with the "before" retirement scenario.
- Under system intact and contingent events, high and low voltage violations are only valid if the change in voltage is greater than 1% as compared to the "before" retirement voltage calculation.

c. Contingencies

A subset of the MISO Transmission Expansion Plan (MTEP) contingencies in the central region was used for AC contingency analysis. Additional contingencies from TVA, LG&E, and AECI were included in this analysis to provide coverage for events on those adjacent transmission systems.

The following North American Electric Reliability Corporation (NERC) Categories of contingencies were evaluated:

1. Category A when the system is under normal conditions.
2. Category B contingencies resulting in the loss of a single element.
3. Category C contingencies resulting in the loss of two or more (multiple) elements.
4. Maintenance outage condition with forced outage during shoulder load conditions.

V. STUDY RESULTS

a. Phase 1 Study Results

1 Branch Results (Appendix A Table 1a)

Table 1a in Appendix A shows contingent conditions causing branch criteria violations without Coleman Units 1 & 2 & 3 and the improvements resulting from the operation of Coleman Units 1 & 2 & 3. Contingent events causing branch violations include NERC Categories B, C1, C2, and C3. While the study scenario with Century Aluminum off does indicate fewer constraints, there remain a few thermal loading issues resulting from Category C contingencies that exist in the MISO Transmission system even with the load removed.

2 Voltage Results (Appendix A Table 1b)

Significant voltage criteria violations associated with the suspension of Coleman Units 1, 2, & 3 and continued operation of Century Aluminum were identified when compared to the continued

availability of the units. Table 1 in Appendix A shows contingent conditions causing criteria violations without Coleman Units 1, 2, & 3 and the improvements resulting from the operation of Coleman Units 1, 2, & 3. Contingent events causing voltage criteria violations include NERC Categories B, C1, C2, and C3. The acceptable post-contingency voltage range is between 0.92 per unit to 1.05 per unit. Therefore, voltages less than 0.92 or greater than 1.05 per unit are a criteria violation. If Century Aluminum were to cease operations, with a load of 0 MVA, the voltage issues within the MISO would be eliminated.

b. Phase 2 Study Results

1 FCITC Transfer Study

FCITC studies were performed to determine the maximum Century Loading without causing transmission system violation.

Three scenarios were studied to determine the maximum Century Loading

- 2014 summer peak
- 2017 summer shoulder
- 2014 summer peak with stressed 2000MW MISO-TVA transfer

The Stressed 2014 summer peak scenario was identified as the worst scenario. The maximum Century Loading was identified as 338MW under system intact and N-1 condition, 200MVar Capacitor Bank at Coleman 161kV bus is required to mitigate voltage violations. The most limiting element is Newtonville – Coleman 161 kV branch and the most critical contingency is [REDACTED].

The Prior-outage scenario was evaluated using the 2014 summer peak stressed case, the maximum Century Loading was identified as 132MW under prior outage of [REDACTED]. The most limiting element is Newtonville – Coleman 161 kV branch and the most critical contingency is [REDACTED]. The results are available at Appendix B.

2 Voltage Analysis (PV analysis) on C3 Contingency Event

The C3 contingency events was studied and the not-converged (blow up) event was selected for PV analysis. The double outage of [REDACTED] was identified causing voltage collapse.

PV analysis was performed to identify the maximum century loading before the voltage collapse. Figure below shows the PV curve of the transfer from AMIL to Century Load. The maximum Century Load before voltage collapse was identified as 230MW.

The study assumptions are summarized as follows,

- Study case: 2014 Summer Peak with 2000MW transfer from MISO to TVA
- C3 Contingency: [REDACTED]
- Capacitor Bank: 200Mvar Capbank at Coleman 161kV bus
- Transfer: AMIL to Century Load

Figure 2 below shows the PV curve of power transfer from AMIL to Century Load against bus voltage of Coleman 161kV bus, Skillman 161kV bus and Davis 161kV bus under [REDACTED]. The maximum Century Load before voltage collapse was identified as 230MW.

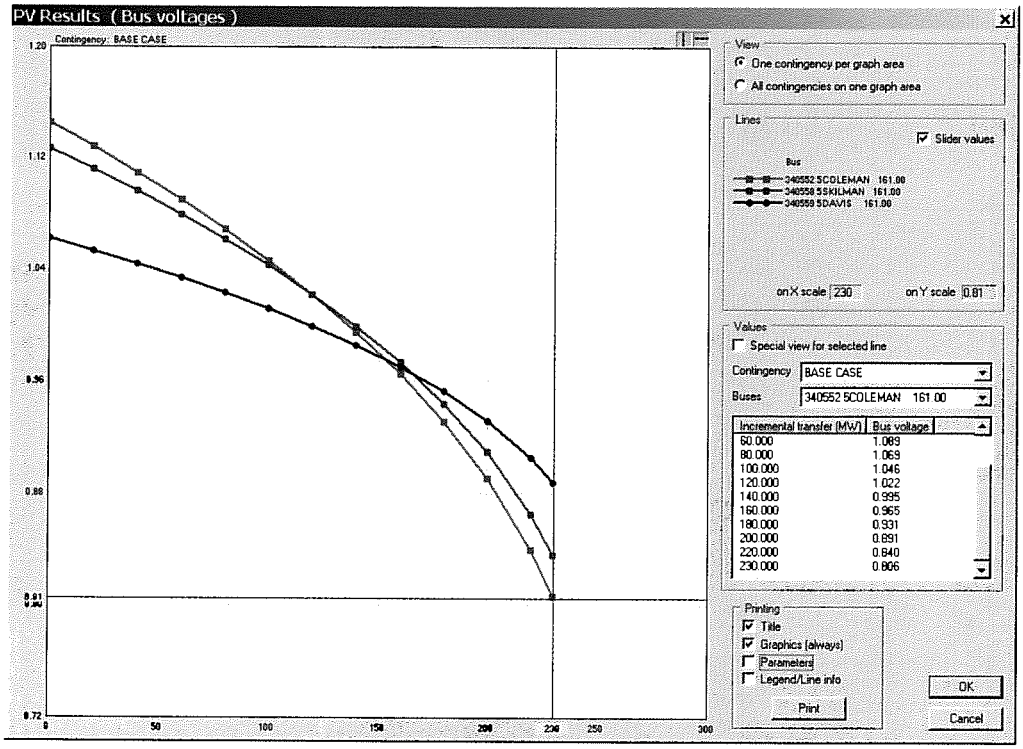


Figure 2: PV Curve on Dbl Contingency of [REDACTED]

VI. CONCLUSION

The study results indicate that potential reliability issues exist which would require the need for Coleman Units 1, 2 and 3 to enter into an SSR Agreement if a mitigation plan is not developed and implemented prior to the potential unit change of status, in accordance with Section 38.2.7 of the MISO Open Access Transmission, Energy & Operating Reserve Markets Tariff ("Tariff"). In addition to determining if reliability issues result from the suspension, further analysis was performed to identify the areas that are subject to allocation of the SSR costs. The areas identified for the cost allocation are Big Rivers Electric Corporation (BREC) and Southern Illinois Gas & Electric (SIGE).

The reduction of Century Load is identified as a potential alternative to avoid entering Coleman SSR agreement. The reductions are summarized as follows,

Century Load Maximum Loading Study Result

- System intact condition
  - Maximum Century Loading: 338MW
  - Most limiting element/Critical contingency
    - Newtonville – Coleman 161/ [REDACTED]
- Prior outage condition
  - Maximum Century Loading: 132MW
  - Most limiting prior outage
    - [REDACTED]
  - Most limiting element/Critical contingency under prior outage
    - Newtonville – Coleman 161 / [REDACTED]
- Voltage Collapse
  - Maximum Century Loading: 230MW
  - Most limiting C3 Contingency
    - [REDACTED]

VII. SSR AGREEMENT COST ALLOCATION

MISO utilizes a load shed methodology to determine the reliability benefits to each MISO Local Balancing Area (LBA) of operation, without the SSR unit(s). Although load shed is not permitted for NERC Category A or B events, this methodology determines the load shed amount needed to relieve all Category B reliability issues and the most severe Category C reliability issues identified, as a proxy for the reliability benefit of the SSR unit operation. The potential SSR Agreement LBA shares that were calculated for this Attachment Y-2 study are included below in Table 2.

Table 2: SSR Agreement LBA Shares

LBA	Load Shed (MW)	LBA Share
BREC	1504	99.5%
SIGE	7	.5%
Total	1511	100.00%

VIII. ANALYSIS OF ALTERNATIVES

c. New Generation or Generation Redispatch

No new dispatchable generation is currently planned for the impacted region.

d. System Reconfiguration and Operation Guidelines

Currently no operating procedures are available that would address specific contingency events to maintain transmission loading within limits

e. Demand Response or Load Curtailment

FCITC studies were performed to determine the maximum Century Loading without causing transmission system violation.

Three scenarios were studied to determine the maximum Century Loading

- 2014 summer peak
- 2017 summer shoulder
- 2014 summer peak with stressed 2000MW MISO-TVA transfer

The Stressed 2014 summer peak scenario was identified as the worst scenario. The maximum Century Loading was identified as 338MW under system intact and N-1 condition, 200MVar Capacitor Bank at Coleman 161kV bus is required to mitigate voltage violations. The most limiting element is Newtonville – Coleman 161 kV branch and the most critical contingency is [REDACTED].

The Prior-outage scenario was evaluated using the 2014 summer peak stressed case, the maximum Century Loading was identified as 132MW under prior outage of [REDACTED]. The most limiting element is Newtonville – Coleman 161 kV branch and the most critical contingency is [REDACTED].

The results are available at Appendix B.

The C3 contingency events were studied and the not-converged (blow up) event was selected for PV analysis. [REDACTED] was identified causing voltage collapse.

PV analysis was performed to identify the maximum century loading before the voltage collapse. Figure below shows the PV curve of the transfer from AMIL to Century Load. The maximum Century Load before voltage collapse was identified as 230MW.

f. Transmission Projects

BREC has not identified transmission upgrades that would be completed to alleviate the loading during the period of suspension. The loading is closely aligned with the local industrial load and mitigation by load curtailment is preferred during the suspension period.

IX. SUMMARY OF POTENTIAL SOLUTION

The suspension period is from 2013 – 2016 and the unit is planned to return to service. This will forego any need for transmission upgrades since the load may be adequately managed by curtailment of industrial load.

Curtailment of load via demand response is one of the alternatives to relieve transmission system overload. Century load would need to be reduced to mitigate potential constraints. The maximum Century loading is 338MW under system intact conditions, 132MW under prior outage of

[REDACTED] due to thermal loading and 230MW under prior outage of [REDACTED]to avoid potential voltage collapse.

A special protection scheme on Newtonsville to Coleman 161kV may provide automated post-contingent response to relieve the system constraints. While the Century plant may operate at 480MW under system intact conditions, curtailment of Century load to 230MW in following the contingent loss of [REDACTED] would be needed to avoid potential voltage collapse. Century Load will be reduced to 132MW at the outage of [REDACTED]. SPS may also be required in other branches with different settings.

X. APPENDICES

Appendix A: Steady-State AC Contingency Results

Table 1a: Branch Results

Table 1b: Voltage Results

Appendix B: FCITC Study Results

Table 2a: 2014SP FCITC

Table 2b: 2017SH FCITC

Table 2c: 2014SP Stressed FCITC

Table 2d: 2014SP Stressed FCITC under Double Outage Condition

Table 2e: PSS/e verification on 2014SP Stressed Scenario

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR A GENERAL ADJUSTMENT IN RATES	)))	Case No. 2012-00535

DIRECT TESTIMONY

OF

LARRY W. HOLLOWAY, P.E.

ON BEHALF OF

KENTUCKY OFFICE OF ATTORNEY GENERAL

PUBLIC REDACTED VERSION

FILED: May 24, 2013

OAG EXHIBIT 1

DIRECT TESTIMONY
OF
LARRY W. HOLLOWAY, P.E.

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BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

CASE NO. 2012-00535

DIRECT TESTIMONY OF

LARRY W. HOLLOWAY, P.E.

I. INTRODUCTION

Q. Please state your name, business address, and position.

A. My name is Larry W. Holloway. My business address is 830 Romine Ridge, Osage City, Kansas. I am an independent consultant testifying on behalf of the Kentucky Office of the Attorney General ("OAG").

Q. Briefly describe your education and work experience.

A. I am a registered professional engineer and have worked over 30 years in all aspects of the electric industry; including generation construction, startup, and operations; regulatory oversight, ratemaking and public policy; and utility resource procurement and management.

My professional experience began outside of the electric industry and includes one year as a field engineer for a natural gas utility and two years as a project engineer for an inorganic chemical plant. Since 1981, the majority of my professional experience has been in the electric industry. I have twelve years of construction, design, startup and operations engineering experience with power plants, primarily nuclear. In 1993, I started work at the Kansas Corporation Commission (KCC) as Chief of Electric Operations, Rates and Services. In 1998, I was promoted to Chief of Energy Operations.

In March of 2009, I accepted the position of Operations Manager with Kansas Power Pool (KPP), a Kansas municipal energy agency. I continue to work at the KPP and do consulting on a part time basis, provided there is no conflict with the responsibilities of my KPP position and I can arrange the necessary time away from my KPP position.

A short summary of my experience and education is attached as Exhibit Holloway-1.

Q. Have you previously filed testimony before this Commission, the Federal Energy Regulatory Commission, or any other state regulatory commissions?

A. I have not previously filed testimony before this Commission. I have filed analysis for settlement purposes at the FERC, and I filed testimony in numerous cases before the Kansas Corporation Commission both as a member of KCC Staff and on behalf of KPP. Testimony I have filed before the KCC includes analysis, review and policy recommendations on utility ratemaking; generation reliability, resource acquisition, planning, dispatch, siting, and fuel and operating costs; utility merger proposal savings and benefits; transmission siting, policy, classification, cost recovery and regionalization; energy cost adjustment mechanisms; and disposition of gain on sale of utility assets. For a full listing of these dockets see Exhibit Holloway-1.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I have been asked by the OAG to review the application, testimony, and data responses in this matter, with particular attention to any potential issues in the areas of cost of service, engineering and load forecasts. My comments and recommendations are included in this testimony and cover the topics of maintenance deferral, Wilson layup and depreciation,

allocation of costs among rate classes and rate design, transmission cost recovery, and the issue of electric deregulation (specifically retail competition for generation service).

Q. Are you sponsoring any exhibits?

A. Yes, I have prepared the following exhibits:

1. Holloway-1 – Qualifications of Larry W. Holloway, P.E.
2. Holloway-2 – Frequency and Dates of Last Inspections
3. Holloway-3 – RUS Communications on Creep Testing
4. Holloway-4 - RUS Communications on Deferred Maintenance
5. Holloway-5 – Layup Adjustment for Wilson Depreciation Expenses
6. Holloway-6 – Allocation of Transmission Costs to Customer Classes

II. MAINTENANCE DEFERRAL

Q. Have you reviewed Big River's deferral of major maintenance at its generating units?

A. Yes. Big Rivers has deferred major maintenance work at its generation facilities for years. Big Rivers' position is described in the direct testimony of Robert W. Berry, Big Rivers' Vice President, Production ("Berry"):[1]

> **Q. Has Big Rivers deferred any significant planned unit outages since the closing of the Unwind Transaction in July 2009?**
>
> A. Yes. Of the twenty-four maintenance outages that were planned between July 2009 at the closing of the Unwind Transaction and the end of 2014, only two have not been delayed, deferred, reduced in scope and duration, or completely cancelled. …

Q. Has Mr. Berry explained why Big Rivers deferred planned major maintenance activities on its generating facilities?

[1] See the Direct Testimony of Robert W. Berry, filed January 15, 2013 in this proceeding, p.7, l.14 to p.8, l.1.

A. Berry implies that Big Rivers' precarious financial position prevented it from making the expenditures necessary to properly maintain their assets:[2]

> **Q. Why did Big Rivers defer maintenance outages during this timeframe?**
> A. Big Rivers has had to defer maintenance outages in each of the years 2010, 2011, and 2012 because that was the only option for Big Rivers to meet the minimum margins for interest ratio ("MFIR") required by its loan agreements. ...

Q. Why does Berry believe that Big Rivers is in this precarious financial position?

A. According to Berry it is apparently due to the depressed off-system sales market and the Commission's decision not to grant Big Rivers' entire requested revenue increase in the 2011 rate case:

> "As a result of the continued depression in the off-system sales market and the failure of Big Rivers to obtain the full amount of the increase it was seeking in the 2011 Rate Case, Big Rivers was required to defer additional maintenance outages in both 2011 and 2012."[3]

Q. But didn't the Commission grant additional revenue for Big Rivers to perform needed maintenance in the 2011 rate case?

A. Yes. The Commission allowed a substantial adjustment ($4,263,292) in Big Rivers test year revenue requirements to provide the funds necessary to complete deferred maintenance.[4]

Q. What types of maintenance activities has Big Rivers deferred at its generating facilities?

A. Ted J. Kelly ("Kelly") of Burns and McDonnell provides direct testimony regarding Big Rivers' proposed depreciation rates, derived from a depreciation study performed by

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2 Ibid., p.8, l.10 to l.15.
3 Ibid.,p.11, l.7 to l.11.
4 See p. 12 to p. 13 of the November 17, 2011, Order in Case No. 2011-00036 ("the 2011 Rate Case").

Burns and McDonnell. In the depreciation study Burns and McDonnell concludes that: "Since the Unwind Closing in 2009, Big Rivers has not performed major maintenance such as valve inspections and turbine generator inspections on a schedule consistent with prudent utility operations."[5] Additionally, in the review of each of Big Rivers' steam powered generating units - the two Green units, the Reid Plant, the Wilson Plant, the 2 HMP&L units, and the 3 Coleman units - Kelly explains that the depreciation study's engineering assessment of these facilities relies on the Boiler Condition Spreadsheet prepared by Big Rivers for each of these units. Importantly, the following statement occurs in Kelly's testimony regarding each of these units:[6]

> ... Of particular note is the Boiler Condition Spreadsheet that contains a status report on all of the major components in the boiler as well as the High Energy Piping ("HEP") and hangers. A consistent program like this for monitoring status and identifying areas to address in future budgets is very good. The HEP and hanger review addresses the concern over creep damage with an aging plant. This type of review program is critical and is currently being performed on all units.

Q. What does Kelly mean by "creep" damage?

A. Technically creep describes a mechanism where a solid material slowly and permanently deforms while being stressed. In high energy piping systems, such as the steam, boiler or feedwater piping in a steam generating unit, this refers to the deformation of high pressure components over time. While steam plant components are designed and built with materials that have sufficient strength to maintain

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5 See Page ES-3 of Exhibit Kelly-1, 2012 Depreciation Study, from the Direct Testimony of Ted J. Kelly filed January 15, 2013 in this proceeding.

6 See the Direct Testimony of Ted J. Kelly filed January 15, 2013 in this proceeding. For Green units see p.16, l.6 to l.12; for HMP&L units see p.18, l.4 to l.10; for the Reid Plant see p.19, l.19 to p.20, l.3; for the Wilson Plant see p.21, l.8 to l.14; and for the Coleman units see p.23, l.18 to p.24, l.2.

structural integrity when the unit is first constructed, over time operating stresses accumulate and can eventually cause slow and cumulative deformation. While this phenomenon does not occur suddenly, over time creep deformation can lead to a rupture of pressure boundary material.

Q. If creep stress primarily affects HEP, why would prudent utility maintenance practices include inspections of hangers?

A. Kelly is referring to pipe hangers and supports. Pipe hangers and supports for HEP are designed to allow HEP components to expand when heated without creating additional stresses on the piping pressure boundary. Deformed or damaged pipe hangers and supports can cause additional stresses on the HEP as well as identify sections of the HEP where deformation has caused hanger and support damage or misalignment.

Q. What are the possible ramifications of creep damage?

A. As discussed by Kelly, if damage is detected, the components should be evaluated on a regular basis and repaired or replaced.[7] Kelly, however, does not dwell on the possible consequences of not performing these inspections on a regular basis. Failure of the high energy piping components while operating can cause damage to other plant components and injuries to plant personnel. Such an event could result in an unplanned and extended outage.

Q. Is creep damage the only phenomenon addressed by the Boiler Condition Spreadsheet?

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7 Ibid, ES-3.

A. No. While this is an emphasis of Kelly's review, the spreadsheet itself lists many different types of inspections of boiler and HEP components. In response to the OAG's Request for Information dated February 14, 2013 (AG 1) question 140 (AG 1-140) Big Rivers provided the latest Boiler Condition Spreadsheet. A summary of scheduled inspections and when these inspections were last performed is provided as a summary in Exhibit Holloway-2.

Q. Are there any observations that raise concerns regarding the inspections and the schedule of inspections shown on the Boiler Condition Spreadsheet?

A. Yes. As shown on Exhibit Holloway -2 it appears that several of the units are behind on Big Rivers' inspection schedule for pressure relief devices, HEP and HEP supports.[8] It is important to note that the maintenance activities detailed in this Boiler Condition Spreadsheet are not my recommendations, the spreadsheet is a tool developed by Big Rivers to indicate when prudent utility maintenance should occur.

One of the critical components listed is the overpressure protection devices on the high energy piping system and components. These devices are typically a form of relief or safety valve and are listed here as "safeties". Just as the relief valve on your hot water tank protects your home and its occupants from damage resulting from an over-pressure explosion of your hot water heater, these devices protect power plant components and personnel from over-pressurization of high energy piping and components. I am not familiar with the specific boiler code requirements for each of

[8] On Exhibit Holloway-2, Examples of Pressure Relief Devices are highlighted in yellow Examples of HEP and HEP Supports are highlighted in green

these components at each of Big Rivers' steam units. However, it is a reasonable assumption that the specific boiler code requirements, whatever their year, version, chapter and verse, require Big Rivers to properly maintain, inspect and test these overpressure protection devices at regular intervals. Nonetheless, as indicated by the following table, it would appear that Big Rivers has seriously neglected its own maintenance plan for these critical components on a number of its units.

Table 1
Inspections of Over Pressure Protection Devices (Safeties)
Indicated on Latest Boiler Condition Spreadsheet Provided in
Response to AG 1-140

Unit	Frequency	Last Performed	Years Overdue
Coleman 1	3 years	May-08	2
Coleman 2	3 years	May-07	3
Coleman 3	3 years	Jun-09	1
Green 1	4 years	Nov-11	Current
Green 2 (main steam and drum)	4 years	May-09	Current
Green 2 (reheat)	4 years	May-05	4
HMPL 1	4 years	Mar-11	Current
HMPL 2	4 years	Feb-12	Current
Reid	4 years	Jun-08	1
Wilson	2 years	Nov-09	1

In addition to overpressure protection devices, Big Rivers' Boiler Condition Spreadsheet also list inspections and maintenance requirements for HEP and HEP supports. As shown in the following table, Big Rivers has also not met its own maintenance schedule for these important components at several of its steam plants.

Table 2
Inspections of High Energy Piping and Piping Supports

Unit	Frequency	Last Performed	Years Overdue
Coleman 1	3 years	May-08	2
Coleman 2	3 years	May-07	3
Coleman 3	3 years	Jun-09	1
Green 1 (hangers)	Annually	Nov-11	1
Green 1 HEP (most)	2 years	Nov-11	Current
Green 2 (hangers)	Annually	Apr-09	3
Green 2 HEP (most)	2 years	May-09	2
HMPL 1	4 years	Mar-11	Current
HMPL 2	4 years	Feb-12	Current
Reid	4 years	Jun-08	1
Wilson (hangers)	2 years	Nov-09	1
Wilson (Piping)	6 years	Nov-09	Current

Q. Has Big Rivers performed inspections for creep damage at its steam units?

A. Yes, however, it has not done so on its own maintenance schedule. In a response to questions by the Rural Utility Service (RUS), Big Rivers provided its creep testing completion results.[9] As a result of the most recent inspections, problems were identified at Coleman 1, Coleman 3 and Reid. Despite this, Big Rivers has not met the inspection intervals on its Boiler Condition Spreadsheet for several of its units.

Q. Has RUS expressed concern regarding Big Rivers' deferral of maintenance activities on its units?

[9] See Exhibit Holloway-3.

A. Yes. When Big Rivers submitted its depreciation study to RUS, RUS responded with concern that this maintenance deferral was "not acceptable to RUS" and that "Big Rivers needs to resume their scheduled major inspections and maintenance per prudent utility operations promptly."[10]

Q. How did Big Rivers respond to the RUS?

A. RUS based its concerns on the depreciation study performed by Burns and McDonnell. As shown on Exhibit Holloway-4 on February 6, 2013 Big Rivers responded to RUS by providing a few pages of Kelly's direct testimony. In particular Big Rivers defended its position based on a statement added to Kelly's testimony *[emphasis added]*:

> "... RUS indicated that Big Rivers needs to resume its scheduled major inspections and maintenance practices. RUS may have misunderstood what we were indicating in the report. As a result of prevailing resource constraints, Big Rivers selectively deferred some major maintenance while RUS indicated that Big Rivers needs to resume its scheduled major inspections and maintenance practices. RUS may have misunderstood what we were indicating in the report. As a result of prevailing resource constraints, Big Rivers selectively deferred some major maintenance while continuing routine maintenance. *Inspections performed by Burns & McDonnell and a review of operating results over the last several years indicated no adverse conditions as a result of this short term deferral.* Burns & McDonnell did review Big Rivers' plans, developed in May 2012, to reschedule the maintenance activities that are described by Bob Berry in his testimony. In light of the favorable operating results and assuming timely rescheduling of the deferred maintenance, in our opinion Big Rivers showed good judgment in the use of available resources and its facilities are being reasonably and prudently operated."[11]

Q. What type of inspections did Burns and McDonnell perform?

A. As described by the depreciation study, none. In 2010 Burns and McDonnell completed "physical site observations" and applied "engineering judgment" to

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10 See the December 27, 2012 letter from RUS to Bailey, included with related correspondence in Exhibit Holloway-4.

11 See the Direct Testimony of Ted J. Kelly filed January 15, 2013 in this proceeding, p.13, l.19 to p. 14, l.9.

approximate the remaining lives of Big Rivers' generating facilities.[12] Physical site observations do not rise to the level of the types of inspections expected and documented on the Boiler Condition spreadsheet. In addition, as described by Kelly, Burns and McDonnell did not even perform these site observations in preparing its depreciation study for this case:

> "Burns and McDonnell's approach to meeting the requirements for the Study was based substantially on performance of the previously completed physical site observations of the generating and transmission facilities by experienced power plant design engineers and transmission system engineers, respectively. These engineers then applied their experience and engineering judgment in approximating the remaining lives of each of Big Rivers' generating facilities. ..."[13]

Burns and McDonnell is a reputable firm with extensive power plant engineering experience. Nonetheless, this hardly supports Kelly's defense of Big Rivers' decision to defer maintenance. There were no Burns and McDonnell inspections over the last several years, instead there were "physical site observations" and these were performed in 2010. Kelly's attempt to justify Big Rivers' maintenance deferral exaggerates the scope and extent of Burns and McDonnell's single visit in 2010.

Q. But doesn't Kelly also base his conclusions on Big Rivers' "favorable operating results"?

A. Yes. However, it is important to understand that Burns and McDonnell's engineering assessment of the remaining life of Big Rivers' generating plants is primarily based upon their susceptibility to creep stress.[14] But creep stress failure is a long-term

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12 Ibid, ES-1.
13 Ibid, ES-1.
14 Ibid, ES-3 to ES-4.

phenomenon and would likely have no effect on short-term reliability. Deferring maintenance activities that are needed to address this long-term failure mechanism could cause problems many years from now. The mere observation that extended and unplanned maintenance activities have not occurred recently does not mean that delaying needed maintenance has caused no harm. In fact it is possible that future equipment failures could be prevented if this maintenance had been performed as scheduled.

Q. Do you believe that favorable operating results justify Big Rivers' maintenance deferral decisions?

A. No. As discussed above, the types of maintenance activities deferred - creep stress testing, inspection and testing of HEP and HEP supports, inspection and testing of overpressure protection devices, major valve inspections and turbine generator inspections - are not activities that, if skipped, are likely to affect short-term reliability measurements. In fact, these are the type of maintenance activities that help prevent major catastrophic equipment failures or unexpected extended outages in the future and will ensure that these assets remain useful for a long and productive service life.

As an example, consider many modern cars with overhead camshafts and close valve clearances. On many of these vehicles the manufacturer recommends that the timing belt should be replaced every 100,000 miles or so. However if you have ever looked at a timing belt that has been removed and replaced after 100,000 miles you will usually notice that it looks as if you could continue to operate the vehicle for another 100,000 miles with little risk of the belt breaking. Nonetheless, the manufacturer

recommends this replacement because the consequences of the timing belt breaking is severe and would likely result in destroying the engine. Because of this possibility, most prudent owners would prefer to spend several hundred dollars replacing the timing belt, rather than take the chance that they would need to spend thousands of dollars to repair or replace the engine.

I believe that by deferring these important maintenance activities Big Rivers may be risking its most valuable assets. Just because the performance of the units has not been affected to date does not indicate that the decision to defer this maintenance has been prudent. Furthermore, it would seem that the Commission granted Big Rivers the needed revenue specifically to perform this maintenance in the 2011 Rate Case and Big Rivers chose not to do so. Granted there would appear to be reasons Big Rivers chose not to do this. Referring to the prior analogy, I am sure we could all come up with reasons not to spend the money to replace the timing belt. Nonetheless I believe this is indicative of questionable management priorities and judgment.

Q. Do you have other concerns regarding Big Rivers' deferral of important maintenance activities?

A. Yes and these concerns are primarily one of incentive. In the 2011 Rate Case, the Commission granted Big Rivers the revenue necessary to perform the maintenance it chose to defer. In this proceeding Big Rivers has included the revenue necessary to "catch up" on its deferred maintenance. Furthermore, Kelly has indicated that if this maintenance is not performed, depreciation rates could be increased due to shortened life expectancy of Big Rivers' generating plants. Where is the incentive for Big Rivers to

perform this maintenance? In the next proceeding Big Rivers can merely ask for even more revenue to perform maintenance it has deferred. Furthermore, the next depreciation study can ask for higher depreciation rates because of the lack of adequate maintenance. While I do not doubt that Big Rivers would like to perform needed maintenance on its generating facilities, it would seem that their current regulatory plan creates a perverse incentive to avoid proper and prudent maintenance of their generation facilities.

Q. Do you have any recommendations for the Commission regarding the issue of deferred maintenance?

A. Yes. Big Rivers has provided a forecast of anticipated maintenance activities needed to "catch up" on its deferred maintenance. The Commission should require Big Rivers to file at regular intervals, but at no less than annually an updated report on its progress to complete these maintenance activities. To the extent Big Rivers has not completed the maintenance activities by the targeted dates, Big Rivers should be required to immediately refund the revenues granted by the Commission in this proceeding to complete these activities to its customers.

III. WILSON DEPRECIATION

Q. Have you reviewed the depreciation study provided by Big Rivers?

A. I have reviewed the depreciation testimony and recommendations provided as a result of the Burns and McDonnell depreciation study. I have not performed an alternative

depreciation study. Nonetheless, I do have a few observations regarding the depreciation study and the conclusions reached regarding the Wilson plant.

Q. What is the primary basis for establishing the estimated useful lives for Big Rivers' generating plant assets in the Burns and McDonnell depreciation study?

A. As stated in the study, Burns and McDonnell based its analysis, at least in part, on the expected accumulated creep stresses on the unit due to hours of service.[15] In fact, the basis for the engineering assessment performed on the units uses an assumed estimated remaining plant life based on total estimated hours of service.[16]

Q. What did Kelly conclude regarding the Wilson Plant?

A. Kelly concluded that the average remaining service life for Wilson account 311, structures, could be assumed to be 28 years and the average remaining service life for plant account 312, Boiler Plant, and account 314, Turbine, was 26 years.[17] Table ES-1 of the study goes further and provides remaining service lives for all of generating plant accounts

Q. How does this affect the depreciation rate for the Wilson unit?

A. Big Rivers' Forecasted Test Period ("FTP") presented in its application assumes that the Wilson unit will be in layup for the next 4 years. In essence this means that Wilson will incur no hours of service over the next 4 years. Therefore it seems reasonable to conclude that the following changes should be made to the Remaining Service Lives for the Wilson Plant accounts as I provide on Table 3.

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15 Ibid, ES-3.
16 Ibid, II-2 through II-7.
17 Ibid, ES-III-8

Table 3
Wilson Remaining Service Life with 4 Year Layup

Plant Account	Description	Remaining Service Life per Table ES-1	Remaining Service Life with 4 Years of Layup
311	Structures	28.2	32.2
312	Boiler Plant	26.1	30.1
312 A-K	Boiler Plant - Environment Compliance Short-Life Production	26.3	30.3
312 L-P	Plant - Environmental	4.4	8.8
314	Turbine	26.5	30.5
315	Electric Equipment	18.3	22.3
316	Miscellaneous Equipment	24.3	28.3

Q. Assuming that all Wilson remaining service lives are extended by 4 years while the plant is in layup, have you provided a calculation for the effect on depreciation expenses?

A. Yes. By using the July 2012 plant account balances provided in response to KIUC 2-20(a) and modifying table ES-1 to show the extended remaining lives for these Wilson Accounts, I calculated the change in depreciation expenses from the current depreciation expenses being charged in the forecasted test period. This calculation and the resulting adjustment of ($2,907,791) are shown on Exhibit Holloway-4.

Q. Are you recommending that this adjustment should be made to recognize the Wilson layup during the forecasted test period?

A. I believe the entire issue of rate treatment of Wilson costs should be carefully considered by the Commission. To the extent that the Commission believes that Wilson costs should be recovered even though the facility will be neither used nor useful during the forecasted test period, I believe the Commission should at the very least adjust the Wilson depreciation expenses to recognize that the remaining service life of the plant accounts will be extended by the forecasted layup period. Mr. Brevitz further addresses in his testimony the extent to which Wilson is "used and useful" from a ratemaking perspective and whether therefore Wilson costs should be included in revenue requirements in this case.

IV. COST OF SERVICE MODEL

Q. Have you reviewed the cost of service study presented by Big Rivers' witness John Wolfram ("Wolfram")?

A. Yes. While I have not provided an alternative cost of service study, I do have several comments and observations regarding Wolfram's study. First, I have concerns regarding the presentation of revenue increases as I believe it does not accurately reflect the effect of the proposed changes the requested rates will have on each customer class. Second, I am concerned that the forecasted billing determinants for the rural and industrial customers contain a bias that could result in a rate design that would recover more than the requested revenue increase. Third, as I will discuss later, Big Rivers has

based the costs in its application on the assumption that Century will continue to take transmission service from Big Rivers, therefore it is reasonable to assume Big Rivers will continue to recover revenue for Century's use of its transmission system.

Q. Please describe your concerns regarding the presentation of the revenue increases.

A. It is always difficult to simply present how the change in rates collected from customers will increase their bills in terms of percentage or similar general observations. However, it is important to understand that Big Rivers' rate increase is a major change in rate design as well as a major increase in overall revenue collected from each rate class. While I do not fault Big Rivers for its overall presentation of these increases, it is important to note that there will be a much greater impact on certain customers than others. In the rural class, for example, while the overall increase is estimated to be an increase of revenue of $39,375,628, or an increase of 28.3%[18], this increase in revenue is collected through a major change in rate design. Of the $39,375,628 increase, Big Rivers is proposing to collect $38,059,745, or 98.3%, by increasing the Rural Demand Charge from $9.697/kW-Mo to $16.848/kW-Mo, or by increasing this charge by 74%.[19] Assuming Big Rivers' members pass these costs along to the Rural residential and small commercial customers in the same fashion, this will result in a much larger rate impact for those customers with lower than average load factors. For example schools, small retail businesses, churches and residentials often have lower-than-average load factors because no one is present for large periods of time. These types of residences,

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18 See revised Exhbit Wolfram-5.2 as provided in response to PSC 2-36.

19 Ibid.

institutions and businesses will be most impacted by this dramatic shift to demand-based cost recovery for this customer class.

Q. Would you agree that increasing the Rural Demand Charge by 74% is a "gradual" increase?

A. No. This is a dramatic increase in this charge and a major change in the way revenues from the Rural customer class are collected. It is my understanding that the Commission has a policy of gradualism for adjustments in cost allocation among rate classes.[20] Nonetheless I am concerned that for many retail customers the net effect of this increase will be anything but gradual.

For example Big Rivers' members Kenergy and Jackson Purchase have their retail tariffs available online. After reviewing these tariffs I observed that even small commercial customers on their systems have demand charges. Should these utilities pass through the same magnitude of demand charge increase Big Rivers is advocating for the Rural customer class, the net effect on small businesses, schools and churches among others would certainly not seem gradual. Additionally this will likely eventually filter down to residential customers on fixed incomes and others that make a conscious effort to conserve usage.

Q. How would the proposed increase in Big Rivers Rural demand rate affect the members' retail residential customers if these customers do not have a demand rate?

A. Moving to a rate design that involves higher revenue recovery from demand charges has a net result of increasing costs for customers with lower load factors. When Big

[20] See response to AG 1-30

Rivers' members design their retail rates to allocate theses costs to their retail customers they will be faced with the difficult decision to either dramatically increase charges for residential customers, or to implement further rate subsidies from commercial customers. Because residential customers typically do not have demand meters, the only way to recover these costs without subsidy from other rate classes will be to dramatically increase customer charges, energy rates, or both. Under either of the above mentioned approached the residentials and commercials would be straddled with rate increases that would simply not be economically feasible.

V. LOAD FORECAST

Q. Have you reviewed the load forecast used in Big Rivers' fully forecasted test period?

A. I have not performed an alternative load forecast, but I have reviewed the forecast used by Big Rivers to arrive at its allocation of costs and rate design. I do have concerns with some of the assumptions used by Big Rivers and the resulting load forecast. From an overall perspective, Big Rivers' load forecast assumes very little growth in the industrial load and an increasing load in the rural class. This appears questionable when one reviews the actual historic data and compares it to the forecasted test period and beyond.

Q. Please elaborate on your observation of the actual Industrial and Rural load as compared to Big Rivers' load forecast.

A. I compared the actual loads recorded for the industrial and rural customers for the periods of 2010, 2011 and 2012, as provided in the confidential response to AG 1-128

with the forecasted values used in the fully forecasted test period and beyond, as provided in the public response to AG 1-127. As a result, the comparison seems to indicate a slight emphasis to assigning costs to the rural customers. **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** These observations are shown on the following tables. Table 4 illustrates the actual and forecasted rural demand from 2010 through 2016, as well as the fully forecasted test period. Table 5 illustrates the actual and forecasted industrial demand over the same periods. Table 6 illustrates the annual change in Demand for both the industrial and retail customer classes over the same period.[21]

[21] Annual monthly demands represent the monthly demands for every month of the year added together. For example if a load had a demand of 1 kW for each of 6 months in a year and a demand of 2 kW for the other 6 months of a year, the annual monthly demand would be (1 kW X 6 months) + (2 kW X 6 months) = 18 kW-Mo for the year.

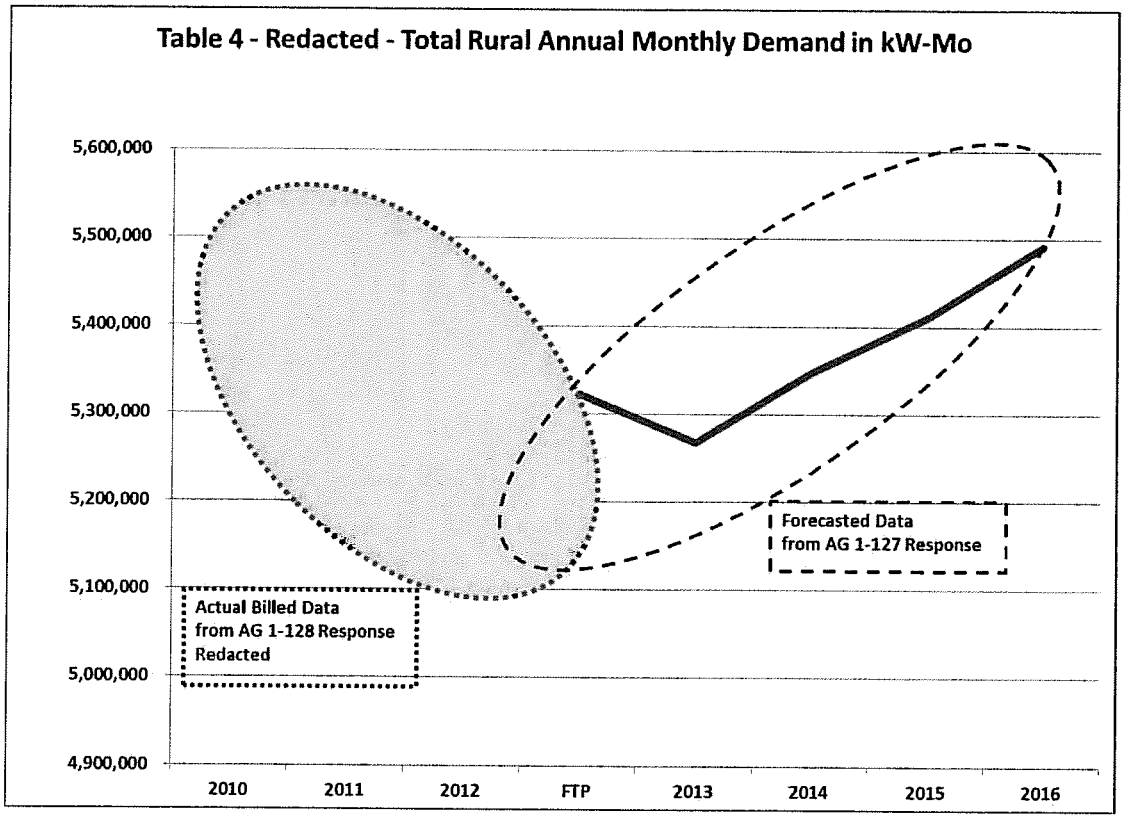


Table 4 - Redacted - Total Rural Annual Monthly Demand in kW-Mo
5,600,000
5,500,000
5,400,000
5,300,000
5,200,000
5,100,000
5,000,000
4,900,000
Actual Billed Data
from AG 1-128 Response
Redacted
Forecasted Data
from AG 1-127 Response
2010
2011
2012
FTP
2013
2014
2015
2016

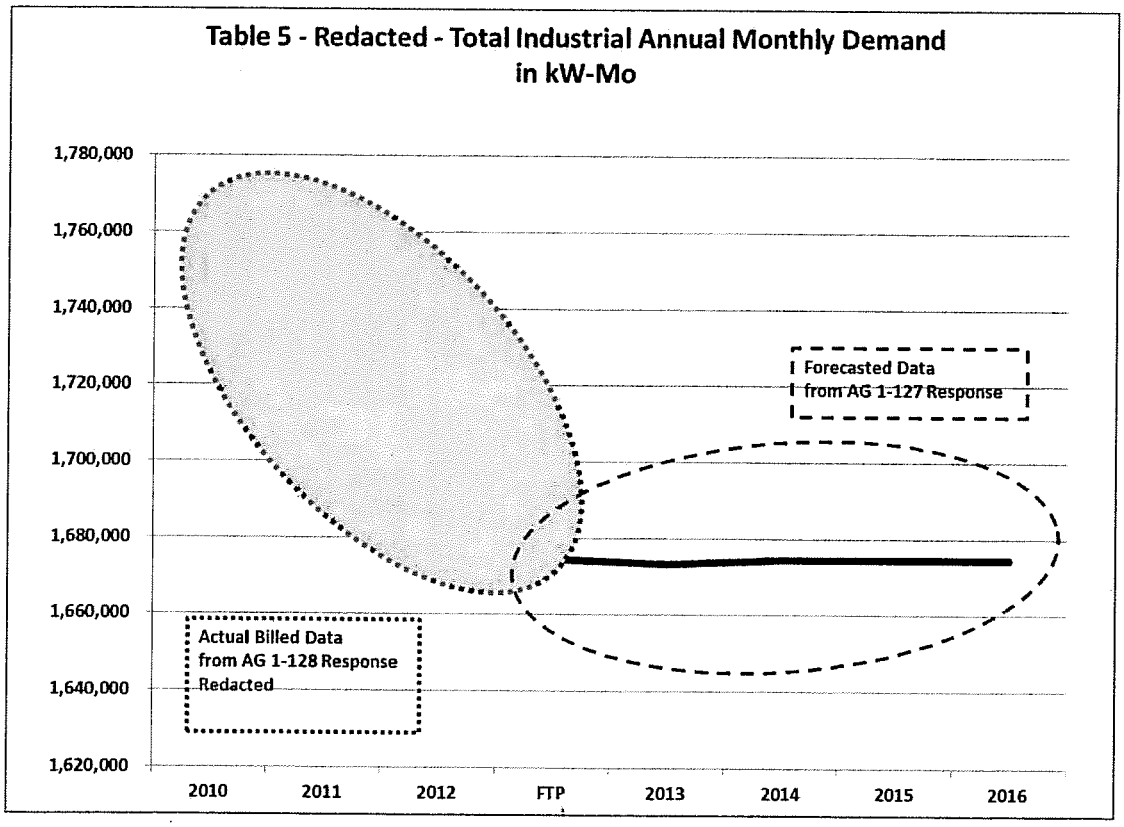
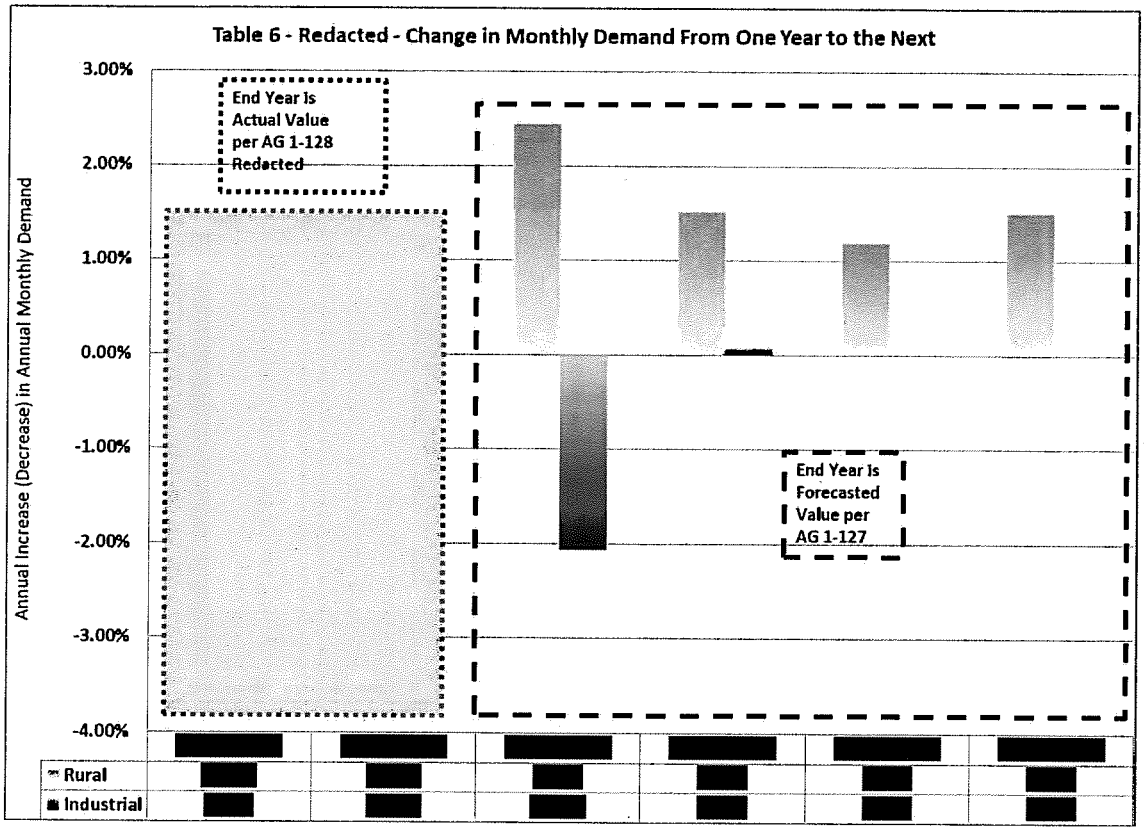


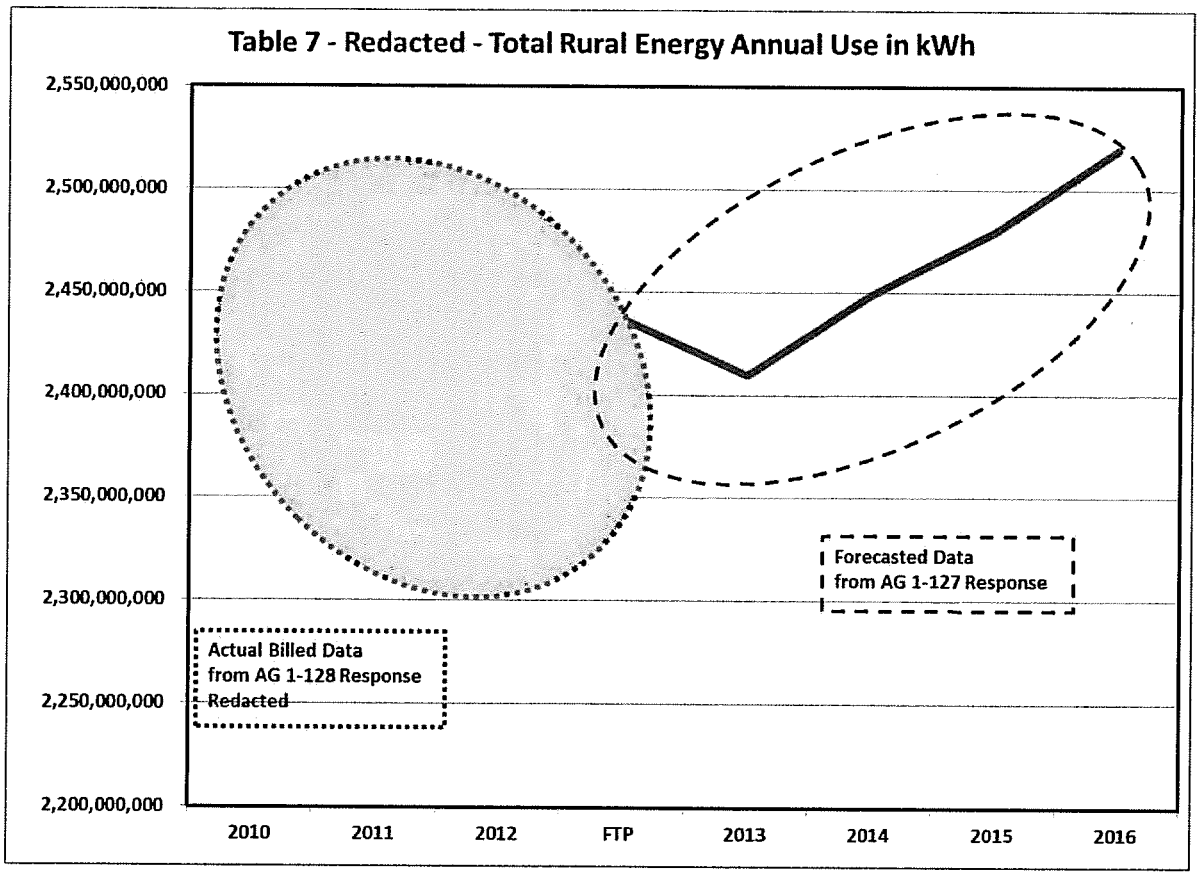
Table 5 - Redacted - Total Industrial Annual Monthly Demand
in kW-Mo
1,780,000
1,760,000
1,740,000
1,720,000
1,700,000
1,680,000
1,660,000
1,640,000
1,620,000
Actual Billed Data
from AG 1-128 Response
Redacted
Forecasted Data
from AG 1-127 Response
2010
2011
2012
FTP
2013
2014
2015
2016



Q. Do the same observations hold for the energy use in the Rural and Industrial forecasts?

A. Yes. **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** Nonetheless, Big Rivers forecasts decreased and flat energy usage for the industrial customer class over the forecasted period. These observations are shown on the following tables. Table 7 illustrates the actual and forecasted rural energy use from 2010 through 2016, as well as the fully forecasted test period. Table 8

illustrates the actual and forecasted industrial energy use over the same periods. Table 9 illustrates the annual change in energy use for both the industrial and retail customer classes over the same period.



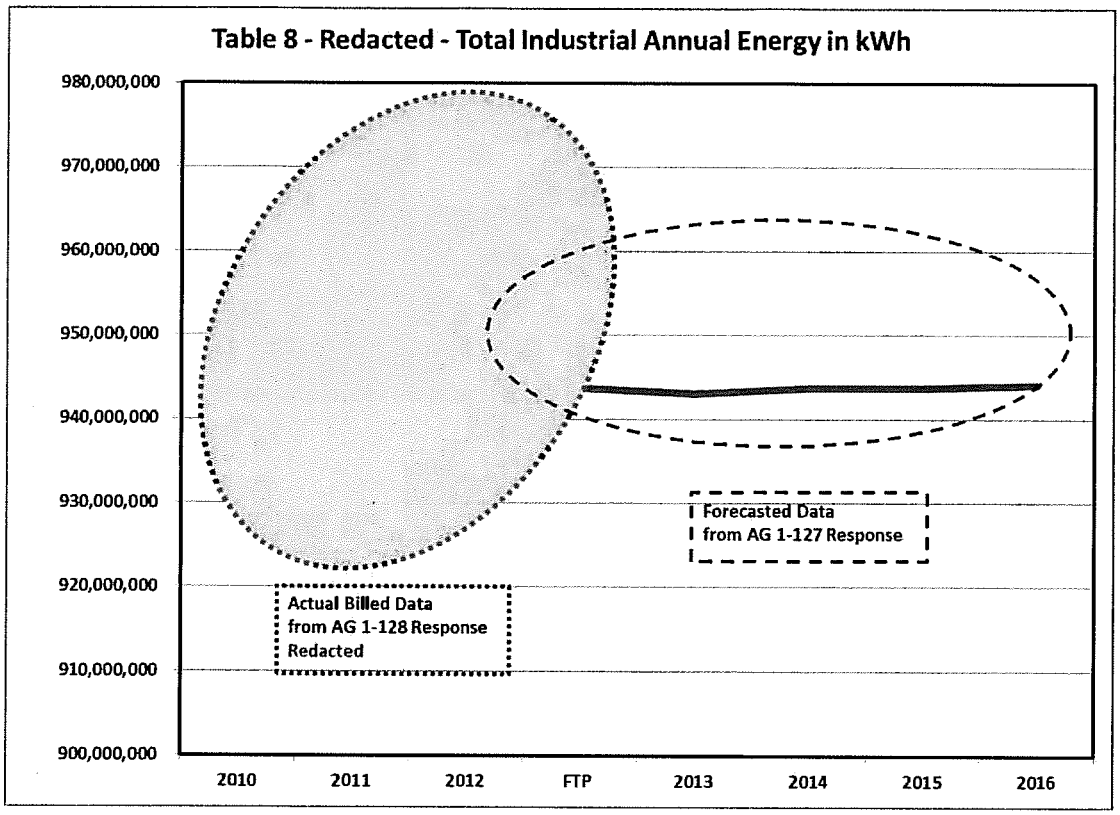


Table 8 - Redacted - Total Industrial Annual Energy in kWh
980,000,000
970,000,000
960,000,000
950,000,000
940,000,000
930,000,000
920,000,000
910,000,000
900,000,000
2010
2011
2012
FTP
2013
2014
2015
2016
Forecasted Data from AG 1-127 Response
Actual Billed Data from AG 1-128 Response Redacted

1

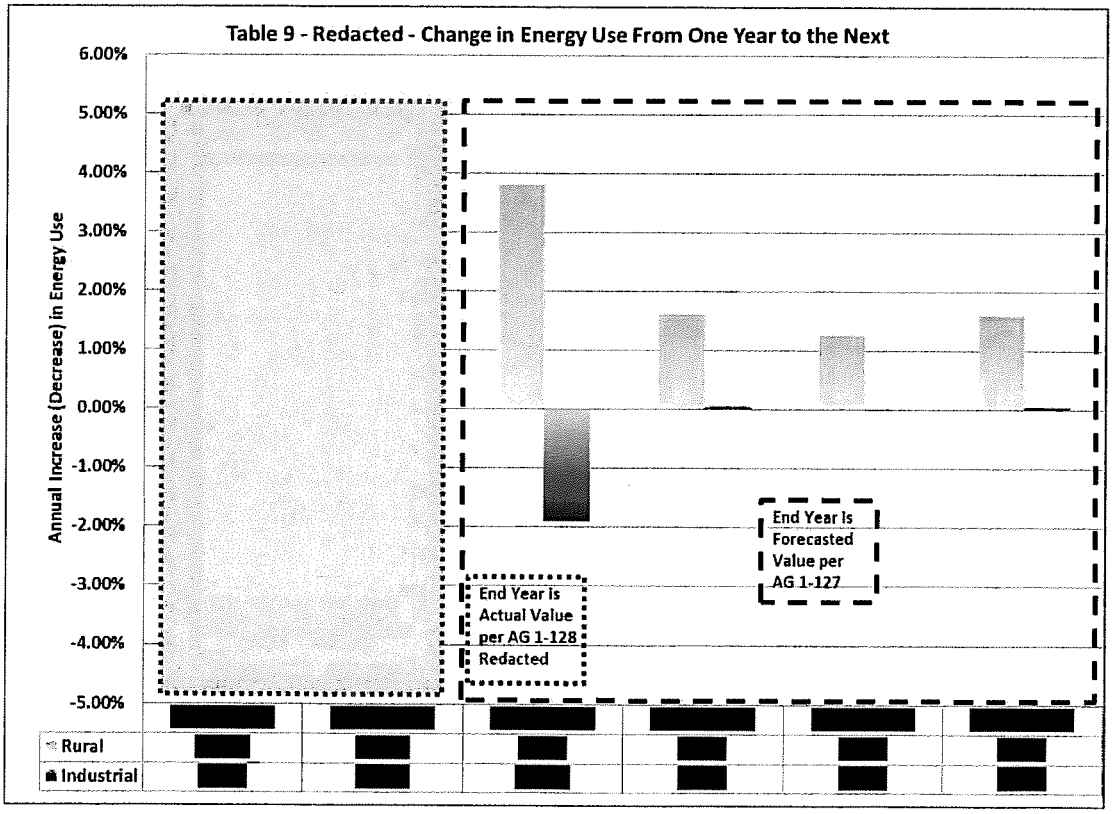


Table 9 - Redacted - Change in Energy Use From One Year to the Next
Annual Increase (Decrease) in Energy Use
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
-1.00%
-2.00%
-3.00%
-4.00%
-5.00%
End Year is Forecasted Value per AG 1-127
End Year is Actual Value per AG 1-128 Redacted
Rural
Industrial

2

Q. What does the load forecast for the fully forecasted test period indicate?

A. The forecast implies that the only growth actually expected is the growth in Rural Demand and Rural energy use. However, in various responses Big Rivers has indicated that it hopes to be able to make up for the loss of Century load with the addition of industrial customers. It is ironic that Big Rivers is anticipating increasing its industrial sales as a way out of its financial problems but its actual forecasts show load growth only for Rural customers, despite recent trends.

VI. REMOVAL OF CENTURY TRANSMISSION REVENUES

Q. Have you reviewed the costs of transmission included in the cost of service study?

A. Yes. Wolfram includes the bundled cost of transmission service in his allocation of costs and subsequent determination of rates using the fully forecasted test period. Transmission costs included in the revenue requirements per the cost allocation worksheets are $31,508,389 for the fully forecasted test period.[22]

Q. How are these costs allocated?

A. These costs are allocated to three customer classes, Rural customers, large industrial customers and the Alcan smelter using the 12 CP methodology.

Q. Are there any costs allocated to the Century Smelter?

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22 See revised Exhibit Wolfram-4.2 as provided in response to PSC 2-36.

A. No. The premise of the fully forecasted test period is to assume the Century load is no longer served by Big Rivers. In other words Big Rivers simply assumed that no costs projected from the fully forecasted test period would be recovered from Century.

Q. Is this approach consistent with the various assumptions that Big Rivers has made in developing its revenue requirements?

A. No. While this will be discussed in further detail later in my testimony, it is sufficient at this point to merely state that the overall assumption of many of the costs estimated in the fully forecasted test period is that the Century load will continue to receive transmission service from Big Rivers.

Q. If the Century load remains on Big Rivers' transmission system, is the cost allocation of transmission revenue requirements provided by Wolfram valid?

A. The overall estimate of transmission revenue requirements based on the fully forecasted test period is unaffected. However, the allocation among customer classes would change.

Q. How would the allocation of transmission costs among customers change if the Century load continues to take transmission service from Big Rivers during the fully forecasted test period?

A. Big Rivers' cost of service study allocates the $31,508,389 of transmission revenue requirements as follows: $15,037,920 to the Rural rate class, $3,994,404 to the Large Industrial rate class, and $12,476,695 to the Smelter class (Alcan only). As shown in Exhibit Holloway-6, if the Century load is considered to remain on Big Rivers' transmission system, the $31,508,389 of transmission revenue requirements would be

allocated as follows: $9,901,763 to the Rural rate class, $2,630,237 to the Large Industrial rate class, $8,215,660 to Alcan and $10,760,729 to Century. The result is that the fully forecasted test period revenue deficiency that Big Rivers is seeking to collect from the full requirements Rural rate class, the large industrial rate class and Alcan is overstated by $10,760,729.

VII. DECISION TO IDLE WILSON

Q. Why did Big Rivers decide to idle a generating plant?

A. As described by Berry, when Big Rivers received Century's Notice of Termination on August 20, 2012, Big Rivers began implementing its Load Concentration Mitigation Plan.[23] One of the steps in the plan is for Big Rivers to idle or reduce generation when the market price does not support the cost of generating.[24]

Q. Why did Big Rivers decide to idle the Wilson plant?

A. Berry provides an explanation of Big Rivers' decision in his testimony.[25] As a member of the Midwest Independent System Operator (MISO) Big Rivers must get approval to layup any generating station to ensure that there is not an adverse impact on transmission system reliability. Big Rivers assumed that because of the proximity of the Coleman station to the Century smelter that if Century continued to operate, it would not be allowed to idle the Coleman generating plants. Because Wilson is not in the same proximity as the Century facility, Big Rivers believes that idling the Wilson facility

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[23] See the Direct Testimony of Robert W. Berry filed January 15, 2013 in this proceeding, p.19, l.8 to l.13.
[24] Ibid, p.66, l.5 to l.8.
[25] Ibid, p.23, l.6 to l.18

will not have the same impact on transmission system reliability should the Century facility continue to operate (and thus require use of the transmission system).

Q. Isn't the Wilson plant the newest generation source for Big Rivers and less expensive to operate than the Coleman units?

A. Yes. Big Rivers has provided a comparison of system fuel costs for its coal units over the 2014 through 2016 forecasted period in response to KIUC 2-3. In this response Big Rivers evaluated **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** Furthermore in response to KIUC 2-56 Big Rivers states that the fixed costs for operating Coleman and idling Wilson are **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** the 2014 to 2016 time period than the costs for idling Wilson and operating Coleman.

Q. Has Big Rivers finalized the decision to idle Wilson?

A. No. As stated Big Rivers must get approval from MISO before idling any generation facility. Currently Big Rivers has indicated that it has not received the necessary "Y-2 report" from MISO. Additionally Big Rivers is also not certain whether Century will be operating.[26]

Q. To clarify, Big Rivers does not know for sure if it will idle either Wilson or Coleman Stations, but has made a far more expensive assumption that it will idle Wilson in presenting its requested revenue increase for the fully forecasted test period, is that correct?

A. Yes. Big Rivers has assumed that Wilson will be idled because MISO would not allow Coleman to be idled if Century load remains on Big Rivers' transmission system.

Q. But doesn't Big Rivers assume that if the Century load goes away it would be allowed to idle Coleman instead?

A. Yes. Big Rivers assumes that if the Century load is no longer on its transmission system, MISO would probably not have reliability concerns that would require Big Rivers to operate Coleman instead of Wilson.

Q. So Big Rivers has included the extra costs of operating Coleman instead of Wilson in its fully forecasted test period AND assumed that it will receive no revenue from Century for use of its transmission system?

A. Yes. Big Rivers has played both sides of the court on this issue. The Commission must decide which it should allow, the extra costs for Coleman, or the assumption that Wilson will be idled and that Century will continue to purchase transmission service

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[26] See response to KIUC 2-3.

from Big Rivers. Big Rivers cannot justify both assumptions in its application. Nonetheless, it is important to note that Big Rivers has decided to go with the assumption that Wilson will be idled, and this assumption is continued throughout its financial models and the case as presented.

VIII. WILSON LAYUP PLAN

Q. Have you reviewed the Wilson layup plan that Big Rivers intends to implement?

A. Yes. Big Rivers provided its layup plan in response to PSC 2-21. The layup plan is extensive and includes multiple spreadsheets with detailed and regularly scheduled activities, including procedures for various plant systems and equipment. Additionally many of the activities require equipment to be secured, disassembled, drained, disconnected, protected with corrosion inhibitors, lubricated and/or periodically rotated or operated. In response to PSC 2-21 (e) Big Rivers describes the layup state for Wilson as: "Mothballed – State where unit is unavailable for service, but can be brought back into service with the appropriate amount of notification, typically weeks or months."

Q. What do you conclude regarding the Wilson layup plan?

A. It would appear that Big Rivers is taking precautions and going to considerable effort to ensure that Wilson will not noticeably degrade or appreciably age while in this mothballed status.

Q. Does Big Rivers believe that these precautions to preserve the plant should increase its useful life?

A. No. In response to AG 2-25 Big Rivers indicated it did not agree that plant depreciation should be suspended while the plant is idled, because "Big Rivers expects that Wilson Station will remain in service and available to operate as needed to cover outages at other stations and to maintain its environmental permits."[27] Nonetheless, Big Rivers did concede that "The remaining useful life of fossil fired steam generating assets is typically estimated based on expected hours of operation and anticipated number of thermal cycles. ..."[28] But Big Rivers went on to state its belief that future depreciation studies would determine if the useful life of the facility was extended by the long period of layup anticipated. Regardless, as previously discussed, the current depreciation study relies heavily on the actual accumulated operating hours. I would recommend that if the Commission allows Wilson costs to remain in rates during the idled period, the depreciation expenses should be adjusted accordingly.

Q. How long does Big Rivers intend to idle Wilson?

A. As stated in Big Rivers' response to PSC 2-21 (c), the current financial model assumes the unit will be idled until 2019. Big Rivers also states that the "Wilson station will be available to operate as needed to cover outages at other stations and to maintain its current environmental permits."

Q. If Wilson is "mothballed" when it is idled, as planned, what level of activity is necessary to restart the unit?

A. While Big Rivers has stated that the Wilson Station will be available to operate as needed, in its response to AG 1-111 Big Rivers indicated that it expected it would take

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27 See response to AG 2-25 (c).

28 See response to AG 2-25.

approximately 43 days to restore the unit from an idled status. Additionally there would be a need to restore consumables such as fuel oil, water treatment chemicals and demineralizer resins, in addition to coal. Furthermore, the decision to idle Wilson also defers needed maintenance that should be performed before the unit can be restarted. As stated in Big Rivers' response to AG 1-111 (g):

> " ... Therefore, the bare minimum cost to restart Wilson Station is $1,470,492 with the aforementioned labor cost still to be added. It should be noted that Wilson Station has deferred maintenance from 2013 that amounts to $11,891,000 ($7,139,000 in Capital and $4,752,000 in fixed O&M). Big Rivers plans to complete this outage work before restarting Wilson Station."

Q. What do you conclude about the availability of Wilson to cover outages at other stations and to maintain its environmental permits?

A. While I am not familiar with the nuances of the Wilson environmental permits and how these would affect Wilson operations, it does not appear that Wilson would be readily available except for unplanned and unanticipated lengthy outages. I mention this for two reasons. First, it is difficult to argue that in this extended layup condition that Wilson is used and useful for utility operations. Second, I would hope that Big Rivers does not take the "availability" of restoring Wilson to service from its layup condition as a justification for deferring any needed maintenance at its other units.

IX. RETAIL COMPETITION (DEREGULATION)

Q. Are you familiar with the discussion going on in the State of Kentucky regarding deregulation for electric supply ("retail competition")?

A. It is my understanding that this issue has been debated during the recent legislative session and may be gaining support among industrial customers.

Q. Is this the first time this issue has been reviewed in the state of Kentucky?

A. No. House Joint Resolution (HJR) 95 passed during the 1998 session of the General Assembly established a Special Task Force on Electricity Restructuring. I have reviewed the task force's final report[29] and while this report was written over a dozen years ago most of the conclusions and findings appear current to the topics being discussed in the context of this proceedings

Q. What were the task forces' recommendations?

A. The task force recommended that the General Assembly take no action to restructure the Kentucky electric utility industry in 2000, continue to study the issue of retail competition, and monitor actions taken in other states that have opened retail markets to competition. Given some of the findings in the study the recommendations were not surprising.

Q. How did the study's findings support the task force's recommendations?

A. Many of the findings at that time seem very current today. For example, the study concluded that retail competition would mean that electricity prices would less than regulated prices with low fuel costs and higher with high fuel costs. As predicted by the study, today low natural gas prices are causing an increased interest in retail competition in Kentucky. Additionally the study concluded that deregulated

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[29] Research Report No. 299, Legislative Research Commission, published September 2000, Final Report Special Task Force on Electricity Restructuring; *Restructuring Kentucky's Electric Utility Industry: An Assessment of and Recommendation for Future Action in Kentucky.*

generation costs would be expected to vary across the state depending on the existing utility's rates. As expected electricity costs would increase for customers being served by low cost utilities and decrease for customers served by high cost utilities. Furthermore the study found that Big Rivers was one of only three utilities in the state that would have stranded costs from implementation of retail competition:

> Positive stranded costs are comprised of purchase power contracts and are concentrated in three utilities: Cinergy's Union Light Heat & Power, Big Rivers, and distribution utilities served by TVA. Their positive stranded costs collectively could range from $295 million to over $1 billion.1 The remaining utilities are in a "negative stranded cost" position, which means that the market value of their generating assets and purchase power contracts is higher than the book value for these assets in a regulated market. Potential negative stranded costs in Kentucky range from nearly $700 million to $3.7 billion.[30]

Q. Do you have any related experience with this issue?

A. Yes. In 1996 the Kansas Legislature passed a bill establishing a retail wheeling task force. As part of this legislation the Kansas Corporation Commission (KCC, the public service commission in Kansas) was directed to not authorize retail competition before July 1, 1999. The task force was directed to provide a final report to the Kansas Legislature before the 1998 legislative session. As detailed in the legislation, the task force was made up of 23 members, including a member of the KCC Staff. I was appointed by the Commission to serve as the KCC Staff member. At the same time as this was going on, the KCC opened a "generic" docket to consider the issue.

Q. Why did the KCC open a docket if the issue was already being considered by the legislature?

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30 Ibid, Finding 4.A.

A. That was a question many people asked in the beginning but as it turned out it was, in my opinion, a good decision for a number of reasons.

First, and not the least, the docket allowed the KCC to somewhat isolate itself from the debate and remain impartial. This became important as their opinion was sought before the task force and it allowed commissioners to defer because there was an open matter under consideration. As the issues became increasingly contentious, and many of the proposals deferred details of implementation to the KCC, it also prevented the commissioners from being accused of prejudging the issues.

Second, because the issue had not been decided, it freed up commission staff to express their personal views publicly while making it clear they were not speaking on behalf of the commission."

Third, it allowed the KCC to collect utility and industry opinions and information and provide the results to the task force. Because the task force was a quasi-legislative body it followed legislative process, not the quasi-judicial regulatory process. What this means is that while parties frequently testify before legislative hearings in Kansas, they do not have to do so under oath. On the other hand the quasi-judicial regulatory process could gather sworn testimony.

Fourth, all of the proposals considered and debated by the task force included a large amount of decisions that were deferred to the KCC, assuming the legislation was enacted.

Finally, the KCC is a fee-based agency and by establishing a generic docket it was able to get the funds necessary to cover staff time and consultant fees.

Q. Who was primarily interested in promoting retail competition in Kansas?

A. At that time there were a few major manufacturers and a few utilities that supported the concept. Over the two years the task force met there was increasing support from the environmental community that saw the effort as a way to implement renewable energy and energy efficiency measures.

Q. What was the result of the retail wheeling task force's efforts?

A. In 1998 a retail wheeling bill was drafted by the task force and delivered to the legislature where it was met with little enthusiasm. The bill itself did not get passed out of a legislative committee and Kansas does not have retail competition today. Nonetheless the fact that the issue was debated, studied and discussed for several years was in itself a benefit. When the bill was finally drafted many of the parties that were enthusiastic at first realized the complexity of the issue. Additionally, many of the implementation details were left up to the KCC and, in my opinion, many of the early enthusiasts were not willing to continue battling their issues in the regulatory process.

Q. What were the major issues debated by the retail wheeling task force?

A. Primarily, They were the extent of stranded costs and how these costs would be recovered. As in Kentucky, the issue of stranded costs depended on the particular utility being studied.

Q. How are stranded costs defined?

A. The Kentucky study provides a concise description of the concept of stranded costs: "A utility's past investment costs or contractual obligations that are not recoverable in a competitive market."

Q. Do you have some examples of stranded costs?

A. In Kansas the primary example was costs related to the one nuclear plant. While the initial plant investment was expensive, the variable operating costs of the nuclear plant are low. Nonetheless deregulated market prices were predicted to allow recovery of the variable costs, but to "strand" the initial investment costs. In the Kentucky study the findings indicate that stranded costs were assumed to be incurred by utilities that had made major investments in coal generating plants. It was concluded that these utilities, including Big Rivers, would be able to recover their variable costs in a retail competition environment, but not the fixed investment costs.

Q. How did either the Kansas and Kentucky task forces propose to address stranded costs?

A. In Kansas the proposed legislation specifically tasked the KCC with the duty of identifying any stranded costs and developing non-bypassable transition costs that would be assigned to all utility customers. The Kentucky study recognized these transition costs as "stranded costs which are charged to a utility customer through some type of fee or surcharge."

Q. If a deregulated electric market creates stranded costs for excessive generation investment, how are these investments treated in a regulated market?

A. In a regulated electric market there are generally two key decisions. The first decision is whether or not the investment is needed, used and useful. For example, a utility may use a new generating plant, but if there were already adequate generation resources and the plant is not needed, the costs are often disallowed. The second decision is

whether or not the investment was prudent and reasonable. Continuing the previous example, even if the new generating plant is needed, if the utility spent far more than was reasonable or prudent to obtain the resource, often a portion of these costs are disallowed.

Q. Please describe the costs related to unneeded Big Rivers' generation in a regulated and a deregulated context.

A. In this proceeding there are really two major possibilities. If Century ceases to operate entirely, Big Rivers will have a large amount of generation investment that is no longer needed or used and useful in the regulated environment. In that case the Commission must decide if Big Rivers' remaining customers will bear the additional costs. On the other hand, if Century continues to operate by purchasing power from the competitive market, Big Rivers will incur stranded costs and the Commission must consider whether or not Century will bear any of the transition costs.

Q. Does this conclude your testimony?

A. Yes.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF BIG RIVERS ELECTRIC CORPORATION, INC. FOR AN ADJUSTMENT OF RATES	)))	Case No. 2012-00535

AFFIDAVIT OF LARRY HOLLOWAY

State of Kansas)
)
)

Larry Holloway, being first duly sworn, states the following: The prepared Pre-Filed Direct Testimony, and the Schedules and Appendix attached thereto constitute the direct testimony of Affiant in the above-styled case. Affiant states that he would give the answers set forth in the Pre-Filed Direct Testimony if asked the questions propounded therein. Affiant further states that, to the best of his knowledge, his statements made are true and correct. Further affiant saith not.

Larry Holloway

SUBSCRIBED AND SWORN to before me this 8th day of April, 2013.

NOTARY PUBLIC

My Commission Expires: LINDA L. MEYER Notary Public - State of Kansas My Appt. Expires 9-29-15

Exhibit Holloway-1

Qualifications of Larry W. Holloway, P.E.

Qualifications of Larry W. Holloway, P.E.

General

Electric industry professional with broad experience in public utility regulation, power plant operations, maintenance and performance testing, transmission service, resource planning, procurement and scheduling, utility load forecasting and planning, project management, and electric utility ratemaking.

Work History and Recent Relevant Experience

Kansas Power Pool (KPP) March 2009 - Present
Operations Manager

Preparation of annual budget, including load forecasts, purchase power and fuel costs, generation capacity costs, and pool wide rate design for a wholesale not for profit municipal energy agency that provides 34 municipal utilities with generation supplies and transmission service.

Responsible for securing generation resources and transmission service for KPP members. Oversight of administration of service contracts for transmission scheduling, Information technology, and metering services. Coordinating of regulatory services and responsible for expert testimony on transmission policy and services.

Kansas Corporation Commission (KCC) July 1993 to March 2009
Chief of Energy Operations

Provided electric utility industry expert testimony before the KCC as member of KCC Staff.in over 40 dockets, including dockets involving generating costs and performance,

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Acted as Commission liaison before many groups including legislative committees, industrial groups, NARUC, environmental groups, civic organizations, utility groups, federal agencies, regional reliability councils, transmission organizations and state social agencies.

Provided presentations, courses and speeches on a variety of KCC and industry issues to many groups including legislative committees, regional transmission organizations, industry conferences and international regulatory bodies.

Wolf Creek Nuclear Plant -WCNOC BOP System Engineering Supervisor	June 1989 to July 1993
Browns Ferry Nuclear Plant- TVA Senior System Engineer	August 1987 to June 1989
Trojan Nuclear Plant – Portland General Electric System Engineer III	October 1984 to August 1987
Wolf Creek Nuclear Plant – Matsco Contract Startup Engineer	April 1983 to October 1984
Burns & Roe – WNP 2 Nuclear Design Engineer	September 1982 to April 1983
Ebasco Inc – Waterford Nuclear Plant Construction Engineer	June 1981 to September 1982
FMC Inc – Inorganic Chemical Plant Project Engineer	June 1979 to June 1981
Kansas Power & Light – Natural Gas Division Field Engineer	June 1978 to June 1979

Education

Univerity of Kansas, Kansas
Bachelor of Science Civil Engineering, December 1977
Bachelor of Science Mechanical Engineering, May 1978
Master of Science Mechanical Engineering, May 1997
Washington State University, Washington
Master of Engineering Management, May 1988

Professional Registration

Registered Professional Mechanical and Civil Engineer, State of Oregon, PE license No. 12989

Expert Witness Testimony

FERC — Provided analysis and affidavit in FERC Docket ER01-1305 for the KCC, which led to a negotiated settlement in an affiliate purchase power agreement between Westar Energy and Westar Generating Inc., and affiliate.

KCC — KCC Staff testimony in Docket Nos. 95-EPDE-043-COM, 96-KG&E-100-RTS, 96-WSRE-101-DRS, 96-SEPE-680-CON, 97-WSRE-676-MER, 98-KGSG-822-TAR, 99-WSRE-381-EGF, 99-WSRE-034-COM, 99-WPEE-818-RTS, 00-WCNE-154-GIE, 00-UCUE-677-MER, 01-WSRE-436-RTS, 01-WPEE-473-RTS, 01-KEPE-1106-RTS, 02-SEPE-247-RTS, 02-EPDE-488-RTS, 02-MDWG-922-RTS, 03-MDWE-001-RTS, 03-WCNE-178-GIE, 03-MDWE-421-ACQ, 03-KGSG-602-RTS, 04-AQLE-1065-RTS, 04-KCPE-1025-GIE, 05-EPDE-980-RTS, 05-WSEE-981-RTS, 06-WCNE-204-GIE, 06-SPPE-202-COC, 06-WSEE-203-GIE, 06-KCPE-828-RTS, 06-KGSG-1209-RTS, 06-MKEE-524-ACQ, 07-WSEE-616-PRE, 07-KCPE-905-RTS, 08-WSEE-309-PRE, 08-KMOE-028-COC, 08-WSEE-609-MIS, 08-MDWE-594-RTS, 08-WSEE-1041-RTS, 08-ITCE-936-COC, 09-KCPE-246-RTS, and 08-PWTE-1022-COC.

Testimony on behalf of KPP in Docket Nos. 09-MKEE-969-RTS, 11-GIME-497-GIE, and 12-KPPE-630-MIS.

Exhibit Holloway-2

Frequency and Dates of Last Inspections

Note: Examples of Pressure Relief Devices are highlighted in yellow

Examples of HEP and HEP Supports are highlighted in green

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
Boiler (general)		Acquisition of tube samples, waterwalls, superheat and reheat	3 years or as needed	May-08
Economizer		Economizer Section, inspection and repair	3 years	Mar-05
Econ. Feed Piping (S)	8-5/8" OD x Sch. 140 SA 106 Gr. B			
Econ. Feed Piping (T)	6-5/8" OD x Sch. 160 SA 106 Gr. B			
Econ. Inlet Hdr.	10-3/4" OD x Sch. 140 SA106 Gr. C			
Econ. Elements	2" OD x 167 MW SA 210 W/ 4-5/8" & 5" Gills			
Econ. Outlet Hdr	6-5/8" OD x Sch. 160 SA106 Gr. C			
Drum		Drum, inspection and repair	yearly	May-08
		Magnetic Particle Testing	9 years	Apr-02
Drum Safeties	(1) - 2-1/2" Crosby HC85W	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
	(1) - 2-1/2" Consolidated 1739WB-2-S	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
	(1) - 3" Crosby HC85W	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
Downcomers				
Furnace RWW Downcomer	Unpierced Section - 12-3/4" OD x Sch. 120 SA 106 Gr. C			
	Pierced Section - 12-3/4" OD x 1-1/2" MW SA 106 Gr. C			
Furnace FWW Downcomer	Unpierced Section - 16" OD x Sch. 120 SA 106 Gr. C			
	Pierced Section - 16" OD x 1-3/4" MW SA 106 Gr. C			
Furnace SWW Downcomer	Unpierced Section - 14" OD x Sch. 120 SA 106 Gr. C			
	Pierced Section - 14" OD x 1-3/4" MW SA 106 Gr. C			
Waterwalls		Waterwall mapping and (NDE)	3 years	May-08
Lower Furn. Front, Rear, Side WW Hdr	8-5/8" OD x 1-5/16"MW SA 106 Gr. C			
Upper Furn. Front & Side WW Hdr	8-5/8" OD x 1-5/16"MW SA 106 Gr. C	UT waterwall drains		
Furnace Roof Hdr	10-3/4" OD x 1-1/8"MW SA 106 Gr. C			
Front WW	2-1/4" OD x 203 MW SA 178 Gr. C			
Side WW	2-1/4" OD x 203 MW SA 178 Gr. C			
Rear WW	2-1/4" OD x 203 MW SA 178 Gr. C			
Load Carry Tubes @ Screen	2-1/2" OD x 250 MW SA 210 Gr. A			
Furnace Roof	2-1/2" OD x 203 MW SA 178 Gr. C			
WW Feeder Tubes	4" OD x 319 MW SA 210 Gr. A-1			
WW Riser Tubes	4" OD x 319 MW SA 210 Gr. A-2			
Lower Arch	2-1/4" OD x 203 MW SA 178 Gr. C			
Knee Tubes	2-1/4" OD x 203 MW SA 178 Gr. C			
HRA		HRA sections, inspection and repair		
HRA Upper & Lower Side Wall Hdr	8-5/8" OD x 7/8" MW SA 106 Gr. C			
Partition Wall Tubes	1-3/4" OD x 165 MW SA 178 Gr. C			
	1-3/4" OD x 260 MW SA 210 Gr. A-1			
HRA Side Wall Tubes	1-3/4" OD x 165 MW SA 178 Gr. C			
	2" OD x 290 MW SA 210 Gr. A-1			
HRA Rear & Roof (RH Pass)	1-3/4" OD x 165 MW SA 178 Gr. C			
HRA Roof (SH Pass)	1-3/4" OD x 165 MW SA 178 Gr. C			
Steam Tubes				
Steam Supply Tubes	4" OD x 319 MW SA 210 Gr. A-1			
Transfer Tubes (Inlet & Outlet Spray Hdr)	Inlet - 4" OD x 380 MW SA 213 T12			
	Outlet - 4" OD x 338 MW SA 209 T12			
Distributing Tubes (Prim. SH Inlet Hdr to HRA Side Wall Hdr)	2-1/4" OD x 220 MW SA 178 Gr. C			
Primary Superheat (Convection)		Superheat sections, inspection and repair	3 years	May-08
SH Inlet Hdr	8-5/8" OD x 7/8" MW SA 106 Gr. C			
Inlet Assembly	2-1/4" OD x 220 MW SA 178 Gr. C			
Conv. SH Intermediate Hdr	12-3/4" OD x 1-5/16" MW SA 106 Gr. C			
Intermediate Assembly	2-1/4" OD x 280 MW SA 210 Gr. A-1			
Outlet Assembly	2" OD x 244 MW SA 210 Gr. A-1			
Conv. SH Outlet Hdr	16" OD x 2-1/4" MW SA 106 Gr. C			
Conv. SH Transfer Pipe (Lower Sprays)	14" OD x Sch. 140 SA 106 Gr. C			

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
Platen Superheater (Division Wall)		Superheat sections, inspection and repair	3 years	May-08
Division Wall Inlet Hdr	16" OD x 2-1/4" MW SA 106 Gr. C			
Inlet Assembly	2" OD x 180 MW SA 178 Gr. C			
Intermediate Assembly	2" OD x 375 MW SA 213 T22			
Outlet Assembly	2" OD x 188 MW SA 213 T12			
Division Wall Outlet Hdr	8-5/8" OD x 1-1/4"MW SA 335 P12			
Finish Superheat (Pendent)		Superheat sections, inspection and repair	3 years	May-08
Spray Control Hdr - Unpierced Section (Upper Sprays)	16" OD x Sch. 160 SA 335 P11	Boroscope header and inspect nozzle		
Spray Control Hdr - Pierced Section (Upper Sprays)	16" OD x 1-3/4" MW SA 335 P11	Boroscope header and inspect nozzle		
Inlet Header Tubes	2" OD x 165 MW SA 213 T12			
Pendent SH Inlet Hdr	14 OD x 1-3/8" MW SA 335 P11			
Inlet Assembly	2-1/4" OD x 320 MW SA 213 T22			
Outlet Assembly	2-1/4" OD x 417 MW SA 213 T22			
Outlet Header Tubes	2" OD x 283 MW SA 213 T22			
Pendent SH Outlet Hdr	23-1/2" OD x 3-5/16" MW (16-1/2" Min ID) SA 335 P22			
Superheat Safeties	Crosby 3M6 HCA-78A	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
	Crosby 2-1/2" HPV-78W	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
Reheater		Reheat Section, Inspection and repair	3 years	May-08
Reheater Inlet Hdr	24" OD x Sch. 160 SA 106 Gr. B			
Inlet Assembly	2-1/4" OD x 150 MW SA 178 Gr. C			
Lower Assembly	2-1/4" OD x 150 MW SA 213 T2			
Intermediate Assembly	2-1/4" OD x 150 MW SA 213 T12			
Upper Assembly	2-1/4" OD x 150 MW SA 213 T22			
Outlet Assembly	2" OD x 156 MW SA 213 T22			
Reheater Outlet Hdr	22" OD x 1-5/16" MW (21-3/4" Min. ID) SA 387 Gr. D			
Reheater Safeties				
Reheat Inlet	(2) - 4" Crosby 4Q8-HC26W	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
Reheat Inlet	(1) - 6" Crosby 6R8-HC26W	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
Reheat Outlet	(1) - 4" Crosby 4Q8-HCA28W	Complete disassemble, clean, inspection, lap disc & nozzle, set adjusting rings/overlap collar to manufacturers specs, reassemble and seal.	3 years	May-08
Headers	Listed with Boiler Section	Boroscope, Mag. Particle, Hardness Testing, Replications, OD measurements	9 years	Apr-02

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
High Energy Piping and Hangers				
Main Steam Inlet to Turbine after Wye	10.75" OD x 1-9/16" AW SA 335 P22	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection, and UT high energy piping	3 years	May-08
Main Steam Line	15.25" OD x 1-7/8" MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection, and UT high energy piping	3 years	May-08
Main Steam Line Hangers	12 hangers	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	May-08
Cold Reheat outlet from Turbine to Wye	16" OD x .500 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection, and UT high energy piping	3 years	May-08
Cold Reheat Line	22" OD x .625 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection, and UT high energy piping	3 years	May-08
Cold Reheat Line Hangers	11 hangers	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	May-08
Hot Reheat Steam Inlet to Turbine after Wye	16" OD x .844 NW SA 335 P22	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection, and UT high energy piping	3 years	May-08
Hot Reheat Line	22" OD x .953 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection, and UT high energy piping	3 years	May-08
Hot Reheat Line Hangers	9 hangers	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	May-08

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
Boiler (general)		Acquisition of tube samples, waterwalls, superheat and reheat	3 years or as needed	May-07
Economizer		Economizer Section, inspection and repair	3 years	May-07
Econ. Feed Piping (S)	8-5/8" OD x Sch. 140 SA 106 Gr. B			
Econ. Feed Piping (T)	6-5/8" OD x Sch. 160 SA 106 Gr. B			
Econ. Inlet Hdr.	10-3/4" OD x Sch. 140 SA106 Gr. C			
Econ. Elements	2" OD x 187 MW SA 210 W/ 4-5/8" & 5" Gills			
Econ. Outlet Hdr	6-5/8" OD x Sch. 160 SA106 Gr. C			
Drum		Drum, Inspection and repair	yearly	Feb-09
		Magnetic Particle Testing	9 years	Mar-02
Drum Safeties				
Drum Safeties	(2) - 2-1/2" Crosby HC85W	Complete disassemble, inspection and repair	3 years	May-07
	(1) - 3" Crosby HC85W	Complete disassemble, inspection and repair	3 years	May-07
Downcomers				
Furnace RWW Downcomer	Unpierced Section - 12-3/4" OD x Sch. 120 SA 106 Gr. C			
	Pierced Section - 12-3/4" OD x 1-1/2" MW SA 106 Gr. C			
Furnace FWW Downcomer	Unpierced Section - 16" OD x Sch. 120 SA 106 Gr. C			
	Pierced Section - 16" OD x 1-3/4" MW SA 106 Gr. C			
Furnace SWW Downcomer	Unpierced Section - 14" OD x Sch. 120 SA 106 Gr. C			
	Pierced Section - 14" OD x 1-3/4" MW SA 106 Gr. C			
Waterwalls		Waterwall mapping and (NDE)	3 years	May-07
Lower Furn. Front, Rear, Side WW Hdr	8-5/8" OD x 1-5/16"MW SA 106 Gr. C			
Upper Furn. Front & Side WW Hdr	8-5/8" OD x 1-5/16"MW SA 106 Gr. C			
Furnace Roof Hdr	10-3/4" OD x 1-1/8"MW SA 106 Gr. C			
Front WW	2-1/4" OD x 203 MW SA 178 Gr. C			
Side WW	2-1/4" OD x 203 MW SA 178 Gr. C			
Rear WW	2-1/4" OD x 203 MW SA 178 Gr. C			
Load Carry Tubes @ Screen	2-1/2" OD x 250 MW SA 210 Gr. A			
Furnace Roof	2-1/2" OD x 203 MW SA 178 Gr. C			
WW Feeder Tubes	4" OD x 319 MW SA 210 Gr. A-1			
WW Riser Tubes	4" OD x 319 MW SA 210 Gr. A-2			
Lower Arch	2-1/4" OD x 203 MW SA 178 Gr. C			
Knee Tubes	2-1/4" OD x 203 MW SA 178 Gr. C			
HRA				
HRA Upper & Lower Side Wall Hdr	8-5/8" OD x 7/8" MW SA 106 Gr. C			
Partition Wall Tubes	1-3/4" OD x 165 MW SA 178 Gr. C			
	1-3/4" OD x 260 MW SA 210 Gr. A-1			
HRA Side Wall Tubes	1-3/4" OD x 165 MW SA 178 Gr. C			
	2" OD x 290 MW SA 210 Gr. A-1			
HRA Rear & Roof (RH Pass)	1-3/4" OD x 165 MW SA 178 Gr. C			
HRA Roof (SH Pass)	1-3/4" OD x 165 MW SA 178 Gr. C			
Steam Tubes				
Steam Supply Tubes	4" OD x 319 MW SA 210 Gr. A-1			
Transfer Tubes (Inlet & Outlet Spray Hdr)	Inlet - 4" OD x 380 MW SA 213 T12			
	Outlet - 4" OD x 338 MW SA 209 T12			
Distributing Tubes (Prim. SH Inlet Hdr to HRA Side Wall Hdr)	2-1/4" OD x 220 MW SA 178 Gr. C			

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
Primary Superheat (Convection)		Superheat sections, inspection and repair	3 years	May-07
SH Inlet Hdr	8-5/8" OD x 7/8" MW SA 106 Gr. C			
Inlet Assembly	2-1/4" OD x 220 MW SA 178 Gr. C			
Conv. SH Intermediate Hdr	12-3/4" OD x 1-5/16" MW SA 106 Gr. C			
Intermediate Assembly	2-1/4" OD x 280 MW SA 210 Gr. A-1			
Outlet Assembly	2" OD x 244 MW SA 210 Gr. A-1			
Conv. SH Outlet Hdr	16" OD x 2-1/4" MW SA 106 Gr. C			
Conv. SH Transfer Pipe (Lower Sprays)	14" OD x Sch. 140 SA 106 Gr. C			
Platen Superheater (Division Wall)		Superheat sections, inspection and repair	3 years	May-07
Division Wall Inlet Hdr	16" OD x 2-1/4" MW SA 106 Gr. C			
Inlet Assembly	2" OD x 180 MW SA 178 Gr. C			
Intermediate Assembly	2" OD x 375 MW SA 213 T22			
Outlet Assembly	2" OD x 188 MW SA 213 T12			
Division Wall Outlet Hdr	8-5/8" OD x 1-1/4"MW SA 335 P12			
Finish Superheat (Pendent)		Superheat sections, inspection and repair	3 years	May-07
Spray Control Hdr - Unpierced Section (Upper Sprays)	16" OD x Sch. 160 SA 335 P11			
Spray Control Hdr - Pierced Section (Upper Sprays)	16" OD x 1-3/4" MW SA 335 P11			
Inlet Header Tubes	2" OD x 165 MW SA 213 T12			
Pendent SH Inlet Hdr	14 OD x 1-3/8" MW SA 335 P11			
Inlet Assembly	2-1/4" OD x 320 MW SA 213 T22			
Outlet Assembly	2-1/4" OD x 417 MW SA 213 T22			
Outlet Header Tubes	2" OD x 283 MW SA 213 T22			
Pendent SH Outlet Hdr	23-1/2" OD x 3-5/16" MW (16-1/2" Min ID) SA 335 P22			
Superheat Safeties	Crosby 3M6 HCA-78A	Complete disassemble, inspection and repair	3 years	May-07
	Crosby 2-1/2" HPV-78W	Complete disassemble, inspection and repair	3 years	May-07
Reheater		Reheat Section, Inspection and repair	3 years	May-07
Reheater Inlet Hdr	24" OD x Sch. 160 SA 106 Gr. B			
Inlet Assembly	2-1/4" OD x 150 MW SA 178 Gr. C			
Lower Assembly	2-1/4" OD x 150 MW SA 213 T2			
Intermediate Assembly	2-1/4" OD x 150 MW SA 213 T12			
Upper Assembly	2-1/4" OD x 150 MW SA 213 T22			
Outlet Assembly	2" OD x 156 MW SA 213 T22			
Reheater Outlet Hdr	22" OD x 1-5/16" MW (21-3/4" Min. ID) SA 387 Gr. D			
Reheater Safeties				
Reheat Inlet	(2) - 4" Crosby 4Q8-HC26W	Complete disassemble, inspection and repair	3 years	May-07
Reheat Inlet	(1) - 6" Crosby 6R8-HC26W	Complete disassemble, inspection and repair	3 years	May-07
Reheat Outlet	(1) - 4" Crosby 4Q8-HCA28W	Complete disassemble, inspection and repair	3 years	May-07
Headers	Listed with Boiler Section	Boroscope, Mag. Particle, Hardness Testing, Replications, OD measurements	9 years	Mar-02

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
High Energy Piping and Hangers				
Main Steam Inlet to Turbine after Wye	10.75" OD x 1-9/16" AW SA 335 P22	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	May-07
Main Steam Line	15.25" OD x 1-7/8" MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	May-07
Main Steam Line Hangers	12 hangers	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	May-07
Cold Reheat outlet from Turbine to Wye	16" OD x .500 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic	3 years	May-07
Cold Reheat Line	22" OD x .625 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	May-07
Cold Reheat Line Hangers	11 hangers	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	May-07
Hot Reheat Steam Inlet to Turbine after Wye	16" OD x .844 NW SA 335 P22	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	May-07
Hot Reheat Line	22" OD x .983 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	May-07
Hot Reheat Line Hangers	9 hangers	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	May-07

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
Boiler (general)		Acquisition of tube samples, waterwalls, superheat and reheat	3 years or as needed	Jun-09
Economizer		Economizer Section, inspection and repair	3 years	Jun-09
Economizer Inlet Header	10-3/4" OD x 1.125" AW SA 106C			
Economizer Feed Pipe to Drum	10-3/4" OD x 1.125" AW SA 106C			
Terminal Tubes @ Inlet/Outlet Hdr	2-1/2" OD x 220 MW SA 210			
Econ. Assemblies	2-1/2" OD x 250 MW SA 210			
Economizer Outlet Header	10-3/4" OD x 1.125" AW SA 106C			
Drum	60" ID x 4.749" MW	Drum, Inspection and repair	yearly	Jun-09
		Magnetic Particle Testing	9 years	Fall-98
	Heads - 60" OD x 4.125" MW			
Drum Safeties	(3) - 3" -2500# Consolidated 1759WA (3"x5"x6")	Complete disassemble, inspection and repair	3 years	Jun-09
Downcomers	16" OD x 320 MW SA 106C			
Waterwalls		Waterwall mapping and (NDE)	3 years	Jun-09
Side Water Feeder Tubes	5" OD x 380 MW SA 210			
Sidewalls	2-1/2" OD x 203 MW SA 178C			
Knee Tubes (Deflector)	3" OD x 240 MW SA 178C			
Lower Arch	2-1/2" OD x 203 MW SA 178C			
Roof Tubes	2-1/2" OD x 203 MW SA 178C			
Convection Side Walls	2-1/2" OD x 240 MW SA 210			
Upper Side WW Hdr	8-5/8" OD x 1.25" AW SA 106C			
Lower Side WW Hdr	8-5/8" OD x 1.25" AW SA 106C			
Upper Front WW Hdr	8-5/8" OD x 1.25" AW SA 106C			
Roof Releaser Hdr	8-5/8" OD x 1.25" AW SA 106C			
Upper Furnace Rear WW Hdr	10-3/4" OD x 1.375 AW SA 106C			
Upper Conv. Rear WW Hdr	8-5/8" OD x 1.25" AW SA 106C			
Front Hopper Hdr	18-1/2" OD x 2.375" MW SA 106C			
Rear Hopper Hdr	18-1/2" OD x 2.375" MW SA 106C			
Side Hopper Hdr	16" OD x 2" MW SA 106C			
Primary Superheat		Superheat sections, Inspection and repair	3 years	Jun-09
Primary Feeder Hdr				
Primary Superheater Inlet Header	10-3/4" OD x 1.375" AW SA 106C			
Primary Superheater Tubes	2-1/2" OD x 203 MW SA 178C			
	2-1/2" OD x 240 MW SA 178C			
	2-1/2" OD x 300 MW SA 210			
	2-1/2" OD x 281 MW SA 209 T1			
	2-1/4" OD x 203 MW SA 213 T11			
Primary Superheater Outlet Header	14" OD x 1.375" MW SA 335 P11			
Superheat Piping	Crossover Piping - 12-3/4" Od x 1.312" AW SA 335 P11			
	Terminal Piping - 16" OD x 2.125" MW SA 335 P22			
Superheat Safeties	Consolidated - 1738WD, 1533YX	Complete disassemble, inspection and repair	3 years	Jun-09

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Material & Size	PM Description	Frequency	Date of Last Inspection
Secondary Superheat (Radiant & HI-Temp)		Superheat sections, inspection and repair	3 years	Jun-09
Secondary Superheat Spray Attemperators Hdr	12-3/4" OD x 1.312" AW SA 335 P11	Boroscope Header and Inspect nozzle	3 years	Jun-09
Secondary Superheater Inlet Hdr	16" OD x 1.375" MW SA 335 P11			
Secondary Superheater Tubes	2" OD x 180 MW SA 213 T11			
	2" OD x 180 MW SA 213 T1			
	1-3/4" OD x 156 MW SA 213 T11			
	2" OD x 203 MW SA 2123 T11			
	2" OD x 313 MW SA 213 T22			
	1-3/4" OD x 313 MW SA 213 T22			
	2" OD x 375 MW SA 213 T22			
Secondary Superheater Outlet Hdr	8-5/8" OD x 1.25" MW SA 106C			
Superheat Safeties	2-1/2" - 2000# Consolidated 1738WD	Complete disassemble, inspection and repair	3 years	Jun-09
	2-1/2" - 2500# Consolidated 1533YX	Complete disassemble, inspection and repair	3 years	Jun-09
Reheater		Reheat Section, inspection and repair	3 years	Jun-09
Reheat Spray Attemperators Hdr	22" OD x SA 105 Gr.2	Boroscope Header and Inspect nozzle	3 years	Jun-09
Reheat Inlet Safeties	(4) - 600# Consolidated - 1775QWB, 1775QV13, 1785WB	Complete disassemble, inspection and repair	3 years	Jun-09
Reheat Inlet Header	16" OD x .656 AW SA 106B			
Reheat Inlet Extension Hdr	16" OD x .500 AW SA 106B			
Reheat Tubes	2-1/2" OD x 135 MW SA 178A			
	2" OD x 120 MW SA 213 T11			
	2" OD x 148 MW Sa 213 T22			
Reheat Outlet Header	22" OD x 1.25" MW SA 335 P2			
Reheat Outlet Safety	(1) - 600# Consolidated - 1775QWD	Complete disassemble, inspection and repair	3 years	Jun-09
Headers	Listed with Boiler Section	Boroscope, Mag. Particle, Hardness Testing, Replications, OD measurements	9 years	Fall-98
High Energy Piping				
Main Steam Line	15-1/4" OD x 2-1/16" AW SA 335 P22	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	Jun-09
Main Steam Inlet Header @ Turbine	15-1/4" OD x 2-1/16" AW SA 335 P22	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	Jun-09
Main Steam Line Hangers	10 hangers, 2 seismic restraints	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	Jun-09
Cold Reheat Header from Turbine to Wye	16" OD x .500" NW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic	3 years	Jun-09
Cold Reheat Header from Wye at turbine to Wye at boiler	22" OD x .750" MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	Jun-09
Cold Reheat Header after Wye to boiler inlet	16" OD x .500 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	Jun-09
Cold Reheat Line Hangers	12 hangers, 4 seismic restraints	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	Jun-09
Hot Reheat Inlet Header to Turbine after Wye	16" OD x .844" NW SA 335 P22	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	Jun-09
Hot Reheat Line	22" OD x 1.125 MW	Plastic Replications, MT/PT nozzles and attachments, and Guided Ultrasonic Inspection	3 years	Jun-09
Hot Reheat Line Hangers	9 hangers, 3 seismic restraints	Inspection of hangers, cold and hot settings, adjustments, MT hangers	3 years	Jun-09

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
Boiler (general)		Acquisition of tube samples, waterwalls, superheat and reheat	2 years	Nov-11
Economizer Inlet Header	10.75" OD x 1.25" MW Thickness SA106B	Economizer Inlet Header Inspection	8 years	
Economizer	2.0" OD x .203" MW Thickness SA178A HF	Economizer Section, inspection and repair	2 years	Nov-11
Economizer Outlet Header	10.75" OD x 1.25" MW Thickness SA106B	Economizer Outlet Header Inspection	8 years	
Drum		Drum, inspection and repair	2 years	Nov-11
Drum Safeties	(3) Crosby size 3M6-HE-96W, (1) Crosby size 3M26-HE-96W	G1 Inspect & Reset all of the Boiler Safeties	4 years	Nov-11
Downcomers		Drum Piping Connections Inspections	8 years	
Waterwalls East and West	2.5" OD x .203" MW Thickness on 3" centers SA210A1	Waterwall mapping and (NDE)	2 years	Nov-11
Waterwalls North and South	2.5" OD x .203" MW Thickness on 3" centers SA210A1	Waterwall mapping and (NDE)	2 years	Nov-11
Boiler Knees	2.75" OD x .240" MW Thickness on 3" centers SA210A1	Waterwall mapping and (NDE) and B&W PSB Thermal Quenching	2 years	Nov-11
Furnace Arch	2.75" OD x .203" MW Thickness on 4" centers SA210A1	Waterwall mapping and (NDE)	2 years	Nov-11
Drum Safeties	3.0"O.D. x .245" MW SA209TA1 1.75" x .185 MW SA209TA1	Primary Superheater Section, inspection and repair	2 years	Nov-11
Primary Superheater Inlet Ring Header	10.75" OD SA-192	Primary Superheater Section, inspection and repair	2 years	Nov-11
Primary Superheater Inlet Bank	2.0" OD x .165" MW Thickness 2.5" OD x .284" MW Thickness SA178A	Primary Superheater Section, inspection and repair	2 years	Nov-11
Primary Superheater Intermediate Bank	2.0" OD x .275" MW Thickness 2.0" OD x .165" MW Thickness SA 213T2	Primary Superheater Section, inspection and repair	2 years	Nov-11
Primary Superheater Outlet Bank	2.5" OD x .345" MW Thickness 2.0" OD x .165" MW Thickness SA 213T2	Primary Superheater Section, inspection and repair	2 years	Nov-11
Primary Superheater Outlet Header	18.25" OD x 2.25" MW SA335P11	Primary Superheater Section, inspection and repair	2 years	Oct-08
Secondary Superheat Spray Attemperators		Secondary Superheat Spray Attemperators Inspections	6 Years	Oct-08
Secondary Superheater Inlet	2.0" OD x .230" MW Thickness Lead Tube each bank SA213 TP304TH Other tubes SA209 T1A and SA 213T2	Superheat sections, inspection and repair	2 years	Nov-11
Secondary Superheater Intermediate	2.0" OD x .230" to .188" MW Thickness SA 213 T22	Superheat sections, inspection and repair	2 years	Nov-11
Secondary Superheater Outlet	1.75" OD x .316" MW Thickness SA213 T22	Superheat sections, inspection and repair	2 years	Nov-11
Main Steam Outlet Header	23.75 OD x 3.25" MW Thickness 25.5" OD x 4.125" MW Thickness SA-335P22	Big Rivers had B&W perform Hone and Glow test on Header. Inspection for ligament	8 years	Apr-07
Main Steam Safeties	(1) each - Crosby, size 3M6-HCA-98W, (1) each - Crosby size 2 1/2 K26-HCA-98W.	G1 Inspect & Reset all of the Boiler Safeties	4 years	Nov-11
Main Steam Inlet Header to Turbine after Wye	17.75 OD x 1.875" MW Thickness 15.0" OD x 1.125" MW Thickness SA-335P11	Inspect welds, monitor creep, inspect attachments	8 years	Apr-07
Main Steam Hangers		G1 inspect and adjust hangers, outage years perform inspection attachments on selected hangers	Annually	Hot Inspection April 2010 Cold Inspection Nov 11
Cold Reheat Safeties	(2) each - Crosby size 4Q8-HC-36W, (2) each - Crosby size 6R8-HC-36W.	G1 Inspect & Reset all of the Boiler Safeties	4 years	Nov-11
Cold Reheat Steam Hangers		G1 inspect and adjust hangers, outage years perform inspection attachments on selected hangers	Annually	Hot Inspection April 2010 Cold Inspection Nov 11
Reheat Inlet Header	27.5" OD x 1.625" MW Thickness SA-106C	Cold Reheat Inlet Header Inspection	8 years	
Reheat Inlet Bank	2.50" OD x .165" MW Thickness 2.50" OD x .180" MW Thickness SA178A	Reheat Inlet Section, inspection and repair	2 years	Nov-11
Reheat Intermediate Bank	2.50" OD x .203" MW Thickness 2.50" OD x .180" MW Thickness SA213 T38	Reheat Intermediate Section, inspection and repair	2 years	Nov-11
Reheat Outlet Bank	2.25" OD x .148" MW Thickness 2.25" OD x .188" MW Thickness SA213 T22	Reheat Outlet Section, inspection and repair	2 years	Nov-11
Reheat Outlet Header	28.75 OD x 2.25" MW Thickness 25.5" SA-335P22	Big Rivers had B&W perform Hone and Glow test on Header. Inspection for ligament cracking, none found	4 years	Feb-04
Reheat Outlet Safety	(1) each - Crosby size 6R8-HCA-38W	G1 Inspect & Reset all of the Boiler Safeties	4 years	Nov-11
Hot Reheat Inlet Header to Turbine after Wye	24" x1.067" MW A335 P22	Inspect welds, monitor creep, inspect attachments	4 years	Apr-07
Hot Reheat Steam Hangers		G1 inspect and adjust hangers, outage years perform inspection attachments on selected hangers	Annually	Hot Inspection April 2010 Cold Inspection Nov 11

Unit Green 1

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
Boiler (general)		Acquisition of tube samples, waterwalls, superheat and reheat	2 years	May-09
Economizer Inlet Header	10.75" OD x 1.25" MW Thickness SA106B	Economizer Inlet Header Inspection	8 years	
Economizer	2.0" OD x .203" MW Thickness SA178A HF	Economizer Section, Inspection and repair	2 years	May-09
Economizer Outlet Header	10.75" OD x 1.25" MW Thickness SA106B	Economizer Outlet Header Inspection	8 years	
Drum		Drum, Inspection and repair	2 years	May-09
Drum Safeties	(3) Crosby size 3M6-HE-96W, (1) Crosby size 3M26-HE-96W	G1 Inspect & Reset all of the Boiler Safeties	4 years	May-09
Downcommers		Drum Piping Connections Inspections		
Waterwalls East and West	2.5" OD x .203" MW Thickness on 3" centers SA210A1	Waterwall mapping and (NDE)	2 years	May-09
Waterwalls North and South	2.5" OD x .203" MW Thickness on 3" centers SA210A1	Waterwall mapping and (NDE)	2 years	May-09
Boiler Knees	2.75" OD x .240" MW Thickness on 3" centers SA210A1	Waterwall mapping and (NDE) and B&W PSB Thermal Quenching	2 years	May-09
Furnace Arch	2.75" OD x .203" MW Thickness on 4" centers SA210A1	Waterwall mapping and (NDE)	2 years	May-09
Drum Safeties	3.0"O.D. x .245" MW SA209TA1 1.75" x .165 MW SA209TA1	Primary Suiperheater Section, inspection and repair	2 years	May-09
Primary Superheater Inlet Ring Header	10.75" OD SA-192	Primary Suiperheater Section, inspection and repair	2 years	May-09
Primary Superheater Inlet Bank	2.0" OD x .165" MW Thickness 2.5" OD x .284" MW Thickness SA178A	Primary Suiperheater Section, inspection and repair	2 years	May-09
Primary Superheater Intermediate Bank	2.0" OD x .275" MW Thickness 2.0" OD x .165" MW Thickness SA 213T2	Primary Suiperheater Section, inspection and repair	2 years	May-09
Primary Superheater Outlet Bank	2.5" OD x .345" MW Thickness 2.0" OD x .165" MW Thickness SA 213T2	Primary Suiperheater Section, inspection and repair	2 years	May-09
Primary Superheater Outlet Header	18.25" OD x 2.25" MW SA335P11	Primary Suiperheater Section, inspection and repair	2 years	May-09
Secondary Superheat Spray Attemperators		Secondary Superheat Spray Attemperators inspections	6 Years	May-09
Secondary Superheater Inlet	2.0" OD x .230" MW Thickness Lead Tube each bank SA213 TP304TH Other lubes SA209 T1A and SA 213T2	Superheat sections, inspection and repair	2 years	May-09
Secondary Superheater Intermediate	2.0" OD x .230" to .188" MW Thickness SA 213 T22	Superheat sections, inspection and repair	2 years	May-09
Secondary Superheater Outlet	1.75" OD x .316" MW Thickness SA213 T22	Superheat sections, inspection and repair	2 years	May-09
Main Steam Outlet Header	23.75 OD x 3.25" MW Thickness 25.5" OD x 4.125" MW Thickness SA-335P22	Secondary Superheater Outlet Header	4 years	Apr-07
Main Steam Safeties	(1) each - Crosby, size 3M6-HCA-98W, (1) each - Crosby size 2 1/2 K26-HCA-98W.	G2 Inspect & Reset all of the Boiler Safeties	4 years	May-09
Main Steam Inlet Header to Turbine after Wye	17.75 OD x 1.875" MW Thickness 15.0" OD x 1.125" MW Thickness SA-335P11	Inspect welds, monitor creep, inspect attachments	4 years	Apr-07
Main Steam Hangers		G2 inspect and adjust hangers, outage years perform inspection attachments on selected hangers	Annually	Hot Inspection Oct 08 Cold Inspection Apr-09
Cold Reheat Safeties	(2) each - Crosby size 4Q8-HC-36W, (2) each - Crosby size 6R8-HC-36W.	G2 Inspect & Reset all of the Boiler Safeties	4 years	Apr-05
Cold Reheat Steam Hangers		G2 inspect and adjust hangers, outage years perform inspection attachments on selected hangers	Annually	Hot Inspection Oct 08 Cold Inspection Apr-09
Reheat Inlet Header	27.5" OD x 1.625" MW Thickness SA-106C	Cold Reheat Inlet Header Inspection	4 years	
Reheat Inlet Bank	2.50" OD x .165" MW Thickness 2.50" OD x .180" MW Thickness SA178A	Reheat Inlet Section, inspection and repair	2 years	May-09
Reheat Intermediate Bank	2.50" OD x .203" MW Thickness 2.50" OD x .180" MW Thickness SA213 T38	Reheat Intermediate Section, inspection and repair	2 years	May-09
Reheat Outlet Bank	2.25" OD x .148" MW Thickness 2.25" OD x .188" MW Thickness SA213 T22	Reheat Outlet Section, inspection and repair	2 years	May-09
Reheat Outlet Header	28.75 OD x 2.25" MW Thickness 25.5" SA-335P22	Reheat Outlet header, inspection and repair	4 years	
Reheat Outlet Safety	(1) each - Crosby size 6R8-HCA-38W	G2 Inspect & Reset all of the Boiler Safeties	4 years	Apr-05
Hot Reheat Inlet Header to Turbine after Wye	24" O.D. x 1.067" MW A335 P22	Inspect welds, monitor creep, inspect attachments	4 years	Apr-05
Hot Reheat Steam Hangers		G2 inspect and adjust hangers, outage years perform inspection attachments on selected hangers	Annually	Hot Inspection Oct 08 Cold Inspection Apr-09

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM/Work Order Description	Frequency	Date of Last Inspection
Boiler (general)		PM-OUTAGE H-1 OBTAIN A TUBE SAMPLE from - Acquisition of tube samples, waterwalls, superheat and reheat	2 years	Apr-12
Economizer	2.5" O.D. x .250 MW SA-210 A1		2 years	Apr-12
Inlet Header	10.75" O.D. x 1.125" Av. Wall / SA-106- Gr. C	H-1 BOILER HEADER CONDITION ASSESSMENT - INSPECT THE HIGH TEMP REHEAT OUTLET HEADER, THE RADIANT SUPERHEAT OUTLET HEADER, THE ECONOMIZER INLET AND THE LOWER WW HEADERS AS PER RFQH-11-111, PO: 204368		Apr-12
Outlet Header	10.75" O.D. x 1.125" Av. Wall / SA-106- Gr. C	H-1 BOILER HEADER CONDITION ASSESSMENT - INSPECT THE HIGH TEMP REHEAT, THE RADIANT SUPERHEAT, THE ECONOMIZER INLET AND THE ECONOMIZER OUTLET HEADERS AS PER RFQH-08-176		Mar-09
Drum		PM-OUTAGE H-1 18 MO DRUM INSPECT FOR BLR. PERMIT RENEWAL	2 years	Apr-12
Furnace Waterwalls				Apr-12
Sidewalls Front Wall Rear Wall	2.5" O.D. x .203 MW / SA-178 Gr. C	Waterwall mapping and (NDE)	2 years	Apr-12
		Boiler Chemical Clean	10 years	Dec. 05
Knee Tubes	2.5" O.D. x .203 MW / SA-178 Gr. C	na	2	Apr-12
Rear WW deflection tubes	3.0" O.D. x .240 MW / SA-178 Gr. C	PM-OUTAGE H-1 OBTAIN TIGHT WIRE OF RWW DEFLECTION TUBES	2	Apr-12
Waterwall Headers		na	na	Apr-12
Drum Safeties	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C			
Lower Furnace Side WW Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C			
Front WW Release Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C	PM-OUTAGE H-1 DYE CHECK SOUTH WATER WALL HEADER TUBES		Apr-12
Roof Release Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C			
Furnace Rear WW Releaser Header	10.750" O.D. x 1.3750" Thk. / SA-106 Gr. C			
Convection Rear WW Release Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C			
Downcomers	16" O.D. x 1.218" Thk. / SA-106 Gr. C			
Furnace Rear Hopper Header	18.5" O.D. x 2.375" Thk. / SA-106 Gr. C			
Furnace Side Hopper Header	16" O.D. x 2.000" Thk. / SA-106 Gr. C			
Primary Superheater			2 years	Apr-12
Upleg Assemblies	2.5" O.D. x .203 MW / SA 178 Gr. C			
Inlet Header	10.75" O.D. x 1.375" Thk. / SA-106- Gr. C			
Outlet Header	14" O.D. x 1.375" Thk. / SA-335 P11			
Radiant Superheater (High Temp. Superheater) Inlet Section	1.75 O.D. x .156" Thk / SA-213 T22	PM-H-1 OUTAGE INSPECTION OF RADIANT SUPERHEATER INLET	2 years	Apr-12
Outlet Section	1.75 O.D. x .313" Thk / SA-213 T22	PM-H-1 OUTAGE INSPECTION OF RADIANT SUPERHEATER OUTLET SECTION	2 years	Apr-12
Main Steam Inlet Header	16" O.D. x 1.375" Thk. / SA-335 P11			
Main Steam Outlet Header	16" O.D. x 2.5" Thk. / SA-335 P22	H-1 BOILER HEADER CONDITION ASSESSMENT - INSPECT THE HIGH TEMP REHEAT, THE RADIANT SUPERHEAT, THE ECONOMIZER INLET AND THE ECONOMIZER OUTLET HEADERS AS PER RFQH-08-176	4 years - This is based on the Riley report from 2009	Apr-12
East Superheat Spray Attemperator		PM-OUTAGE - INPSECT H-1 EAST SUPERHEAT SPRAY ATTEMPERATOR	6 year	Mar. 09
West Superheat Spray Attemperator		PM-OUTAGE - INPSECT H-1 WEST SUPERHEAT SPRAY ATTEMPERATOR	6 years	Mar. 09

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM/Work Order Description	Frequency	Date of Last Inspection
High Temperature Reheater Inlet Bank (Primary Reheater)	2.5" O.D. x .135 MW / SA-178 Gr. A	PM-H-1 OUTAGE INSPECTION OF HIGH TEMP REHEATER	2 years	Apr-12
High Temperature Reheater Intermediate Bank	2" O.D. x .120 MW / SA 213 T11			Apr-12
High Temperature Reheater Outlet Bank	2" O.D. x .148 MW / SA 213 T22			Apr-12
Reheat Inlet Header	16" O.D. x .656 Avg. Thk. / SA-106 Gr. B			
Reheat Outlet Header	22" O.D. x 1.250" Thk. / SA-335 P22	H-1 BOILER HEADER CONDITION ASSESSMENT - INSPECT THE HIGH TEMP REHEAT OUTLET HEADER, THE RADIANT SUPERHEAT OUTLET HEADER, THE ECONOMIZER INLET AND THE LOWER WW HEADERS AS PER RFQH-11-111, PO: 204368		Apr-12
East Reheat Spray Attemperator		PM-OUTAGE - INPSECT H-1 EAST REHEAT SPRAY ATTEMPERATOR	6 year	
West Reheat Spray Attemperator		PM-OUTAGE - INPSECT H-1 WEST REHEAT SPRAY ATTEMPERATOR	6 years	
High Energy Pipe Hangers				
Hot Reheat Pipe Hangers				Mar- 11
Cold Reheat Pipe Hangers				Mar- 11
Main Steam Pipe Hangers				Mar- 11
Boiler Safeties		PM-OUTAGE H-1 INSPECTION OF BOILER SAFETY VALVES	4 years	Mar- 11
North West Drum Safety	Size 3", Style 3-1759WA-2-S, Set 2200, Shop # BN6139, Capacity 383,700 #/hr.;		4 years	Mar- 11
South West Drum Safety	Size 3", Style 3-1759WA-2-S, Set @ 2230, Shop # BN6140, Capacity 348,400 #/hr.		4 years	Mar- 11
East Drum Safety	Size 3", Style 3-1759WA-1-S, Set 2260, Shop # BN6349, Capacity 420,500 #/hr		4 years	Mar- 11
Superheat Steam Line Safety	Size 2-1/2", Style 1738WD-1-S, Set 2040, and Shop #BN6142, Capacity 201,856 #/hr		4 years	Mar- 11
Reheater Safety Valve #1	Size 4", Style 4-1755QWD-1-S, Set 535, Shop # BN6354, Capacity 214,510 #/hr		4 years	Mar- 11
Reheater Safety Valve # 2	Size 4", Style 4-1775-QWB-1-S, Set 580, Shop # BN6351, Capacity 265,698 #/hr		4 years	Mar- 11
Reheater Safety Valve #3	Size 4", Style 4-1775-QWB-1-S, Set 595, Shop # BN6144, Capacity 272,353 #/hr		4 years	Mar- 11
Reheater Safety Valve #4	Size 6", Style 6-1705-RWB-1-S, Set 610 Shop # BN6353, Capacity 404,115 #/hr		4 years	Mar- 11
Sootblower system safety	Size 2" x 3", Style 1922HT, Set 600, Shop # TC 61363, Capacity 26,480		4 years	Mar- 11
Low Pressure Header System Safety	Size 4"x 6", Style 1910NC, Set 125, Shop # BM9421701, Capacity 33,665.5 #/hr, Serial # 1H46635		4 years	Mar- 11
LP Feed Water Heater Safeties		PM-OUTAGE H-1 FOUR YEAR PM OF L.P. HEATER SAFETY VALVES		Mar- 11
# 1 F.W. Heater Water Side	Size ¾", TYPE 19110MC-MT-FT-LA, Set 400, Shop # TM-37006, Capacity 59 GPM.		4 years	Mar- 11
# 2 F.W. Heater Steam Side	Size 2J3, Style J025-STM-C, Set 125, Shop # 35442, Capacity 9792		4 years	Mar- 11
# 2 F.W. Heater Water Side	Size ¾", Type 19110MC-MT-FT-LA, Set 400, B/M #41437A-2, Capacity 59 GPM, Serial # TM-37013		4 years	Mar- 11
# 3 F.W. Heater Steam Side	Size 2J3, Style J025-STM-C, Set 75, Shop # 35442		4 years	Mar- 11
# 3 F.W. Heater Water Side	Size ¾", TYPE 19110MC-MT-FT-LA, Set 400, Shop # TM-37012; B/M #41437A-3, Capacity 59 GPM		4 years	Mar- 11
Deaerating Heater safety valves 2 Ea.	Size 6" x 8", Style J0253-STM, Set 200, Shop # 47159-M2, Capacity 129,613		4 years	Mar- 11
HP Feed Water Heater Safeties		PM-OUTAGE H-1 FOUR YEAR PM OF H.P. HEATER SAFETY VALVES		Mar- 11
# 5 F.W. Heater Steam Side	Size 2H3, Style J036-STM-C, Set 350, Shop # 35539, Capacity 15697		4 years	Mar- 11
# 5 F.W. Heater Water Side	Size ¾" x 1", Style 995H/HPC1, Set 3000, S/N TK43795; B/M CC2079 Capacity 5518		4 years	Mar- 11
# 6 F.W. Healer Steam Side	Size 2.5" X 4", Model 1912JT-TD-34, Type 1912-00JT-4-CC-TD-34-RF-SS-HP, Set 725, S/N TJ95837, Capacity 53,501		4 years	Mar- 11
# 6 F.W. Healer Water Side	Size ¾", Type 1995T/HP-1, Set 3000, Shop # 37210, Capacity 5,521		4 years	Mar- 11

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM/Work Order Description	Frequency	Date of Last Inspection
Boiler (general)		PM-H-2 OUTAGE OBTAIN A TUBE SAMPLE FROM THE FOLLOWING AREAS	2 years	Feb-12
Economizer	2.5" O.D. x .250 MW SA-210 A1		2 years	Feb-12
Inlet Header	10.75" O.D. x 1.125" Av. Wall / SA-106- Gr. C			Apr-10
Outlet Header	10.75" O.D. x 1.125" Av. Wall / SA-106- Gr. C			Apr-10
Drum		PM-H-2 OUTAGE 18 MO DRUM INSPECT FOR BLR PERMIT RENEWAL	2 years	Apr-10
Furnace Water walls				
Sidewalls Front wall Rear Wall	2.5" O.D. x .203 MW / SA-178 Gr. C	Water wall mapping and (NDE)	2 years	Apr-10
		Boiler Chemical Clean		Oct-08
Knee Tubes	2.5" O.D. x .203 MW / SA-178 Gr. C	na	na	Feb-12
Rear WW deflection tubes	3.0" O.D. x .240 MW / SA-178 Gr. C	PM-H-2 OUTAGE OBTAIN TIGHT WIRE OF RWW DEFLECTION TUBES	2 years	Apr-10
Water wall Headers				
Drum Safetles	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C			
Lower Furnace Side WW Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C	PM-OUTAGE H-2 INSPECT THE LOWER WATER WALL HEADER	2 years	Apr-10
Front WW Releaser Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C	PM-H-2 DYE CHECK SOUTH WATER WALL HEADER TUBES		Apr-10
Roof Release Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C			
Furnace Rear WW Releaser Header	10.750" O.D. x 1.3750" Thk. / SA-106 Gr. C			
Convection Rear WW Release Header	8.625" O.D. x 1.250" Thk. / SA-106 Gr. C			
Down comers	16" O.D. x 1.218" Thk. / SA-106 Gr. C			
Furnace Rear Hopper Header	18.5" O.D. x 2.375" Thk. / SA-106 Gr. C			
Furnace Side Hopper Header	16" O.D. x 2.000" Thk. / SA-106 Gr. C			
Primary Superheater			2 years	Feb-12
Upleg Assemblies	2.5" O.D. x .203 MW / SA 178 Gr. C			
Inlet Header	10.75" O.D. x 1.375" Thk. / SA-106- Gr. C			
Outlet Header	14" O.D. x 1.375" Thk. / SA-335 P11			
Radiant Superheater (High Temp. Superheater)		PM-H-2 OUTAGE INSPECTION OF RADIANT SUPERHEATER	2 years	Feb-12
				Apr-10
Main Steam Inlet Header	16" O.D. x 1.375" Thk. / SA-335 P11			
Main Steam Outlet Header	16" O.D. x 2.5" Thk. / SA-335 P22	H-2 Boiler Header Condition Assessment - High Temp Reheat, Superheat outlet, Economizer Inlet, and the Economizer outlet headers.	4 years - This is based on the Riley report from 2009	Apr-10
East Superheat Spray Attemperator		PM-OUTAGE - INSPECT H-2 EAST SUPERHEAT SPRAY ATTEMPERATOR	6 year	Apr-10
West Superheat Spray Attemperator		PM-OUTAGE - INSPECT H-2 WEST SUPERHEAT SPRAY ATTEMPERATOR	6 years	Apr-10
High Temperature Reheater Inlet Bank (Primary Reheater)	2.5" O.D. x .135 MW / SA-178 Gr. A	PM-H-2 OUTAGE INSPECTION OF HIGH TEMP REHEATER	2 years	Feb-12
High Temperature Reheater Intermediate Bank	2" O.D. x .120 MW / SA 213 T11		2 years	Apr-10
High Temperature Reheater Outlet Bank	2" O.D. x .148 MW / SA 213 T22	PM-OUTAGE - H-2 PRIMARY REHEATER	2 years	Apr-10
Reheat Inlet Header	16" O.D. x .656 Avg. Thk. / SA-106 Gr. B			Oct-08
Reheat Outlet Header	22" O.D. x 1.250" Thk. / SA-335 P22	H-2 Boiler Header Condition Assessment - High Temp Reheat, Superheat outlet, Economizer Inlet, and the Economizer outlet headers.		Apr-10
East Reheat Spray Attemperator			6 year	
West Reheat Spray Attemperator			6 years	
High Energy Pipe Hangers				
Hot Reheat Pipe Hangers				Feb-12
Cold Reheat Pipe Hangers				Feb-12
Main Steam Pipe Hangers				Feb-12

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM/Work Order Description	Frequency	Date of Last Inspection
Safety Valves				
Boiler Safeties		PM-H-2 OUTAGE INSPECTION OF BOILER SAFETY VALVES	4 years	Feb-12
North East Drum Safety	Size 3", Style 1759WA-2-S, Set 2200, Shop # BN63474, Capacity 383,700 #/hr		4 years	Feb-12
South East Drum Safety	Size 3", Style 1759WA-2-S, Set @ 2230, Shop # BN6348, Capacity 348,400 #/hr		4 years	Feb-12
West Drum Safety	Size 3", Style 1749WA-1-S, Set @ 2260, Shop #BN6141, Capacity 420,500 #/hr;		4 years	Feb-12
Superheat Steam Line Safety	Size 2-1/2", Style 1738WD-1-S, Set 2040, Shop # BN6350, Capacity 201,856 #/hr		4 years	Feb-12
Reheater Safety Valve #1	Size 4", Style 1755QWD-1-S, Set 535, Shop # BN6146, Capacity 214,510 #/hr		4 years	Feb-12
Reheater Safety Valve # 2	Size 4", Style 1775QWB-1-S, Set 580, Shop # BN6352, Capacity 265,698 #/hr		4 years	Feb-12
Reheater Safety Valve #3	Size 4", Style 1775QWB-1-S, Set 595, Shop # BN6143, Capacity 272,353 #/hr		4 years	Feb-12
Reheater Safety Valve #4	Size 6", Style 1705RWB-1-S, Set 610 Shop # BN6145, Capacity 404,115 #/hr		4 years	Feb-12
Soot blower system safety	Size 2" x 3", Style 1922HT, Set 600, Shop # TC 81364, Capacity 26,480		4 years	Feb-12
Low Pressure Header System Safety	Size 4"x 6", Style J0263STMC, Set 125, Shop # 45627 M2, Capacity 33027		4 years	Feb-12
LP Feed Water Heater Safeties		PM-H-2 OUTAGE FIVE YEAR PM OF L.P. HEATER SAFETY VALVES		Feb-12
# 1 F.W. Heater Water Side	Size ¾" x 1", Style JMB-C-C, Set 400, Shop # 34970, Capacity N/A		4 years	Feb-12
# 2 F.W. Heater Steam Side	Size 2J3, Style J025-STM-C, Set 50, Shop # 35442M3, Capacity 4484		4 years	Feb-12
# 2 F.W. Heater Water Side	Size ¾" x 1", Style 1994C, Set 400, Shop # TH 56384, Capacity 200		4 years	Feb-12
# 3 F.W. Heater Steam Side	Size 2J3, Style J025-STM-C, Set 75, Shop # 35442, Capacity 6253		4 years	Feb-12
# 3 F.W. Heater Water Side	Size ¾" x 1", Style 1994C, Set 400, Shop # TH 56379, Capacity 325		4 years	Feb-12
Deaerating Heater safety valves 2 Ea.	Size 6" x 8", Style J025-3-STM, Set 200, Shop # 47159-M2, Capacity 99,240		4 years	Feb-12
HP Feed Water Heater Safeties		PM-H-2 OUTAGE FIVE YEAR PM OF H.P. HEATER SAFETY VALVES		Feb-12
# 5 F.W. Heater Steam Side	Size 2-1/2" J-4, Style J046-STM-C, Set 300, Shop # 35539M5, Capacity 13537		4 years	Feb-12
# 5 F.W. Heater Water Side	Size ¾" x 1", Style JMB-T-C, Set 3000, Shop # 40631, Capacity 5681		4 years	Feb-12
# 6 F.W. Heater Steam Side	Size 2-1/2, Style 1912 JC-2, Set 650, Shop # TH 72856		4 years	Feb-12

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM/Work Order Description	Frequency	Date of Last Inspection
Boiler (general)		PM-OUTAGE R-1 OBTAIN A TUBE SAMPLE		Sep-08
Economizer	2.0" O.D. x .150 MW SA-178 Gr. C		2 years	Sep-08
Upleg Assemblies	2.52" O.D. x .180 MW / SA 178 Gr. C			
Inlet Header	12.75" O.D. x 1.125" Av. Wall / SA-106- Gr. B			
Outlet Header	8.625" O.D. x 1.100" Min. Wall / SA-106- Gr. C			
Drum		PM-OUTAGE R-1 18 MO DRUM INSPECT FOR BLR PERMIT RENEWAL	2 years	Sep-08
Furnace Waterwalls				
Sidewalls Front Wall Rear Wall	3.250" O.D. x .220 MW / SA-178 Gr. C	Waterwall mapping and (NDE)	2 years	
		Boiler Chemical Clean	10 years	Jun-04
Knee Tubes	3.250" O.D. x .220 MW / SA-178 Gr. C			
Upper Furnace Arch	3.250" O.D. x .220 MW / SA-178 Gr. C			
Drum Safeties		na	na	
Lower Side WW Header	18.5" O.D. x 1.5 Min. Thk. / SA-106 Gr. C	REPLACE R-1 LOWER WATERWALL HEADER TUBE STUBS	na	Sep-08
Lower Side Sloping Headers	10.750" O.D. x 1.125 Ave. Thk. / SA-106 Gr. B			
Front Hopper Header	18.5" O.D. x 1.5 Min. Thk. / SA-106 Gr. C			
Platten Headers	16" O.D. x 1" Min. Thk. / SA-106 Gr. C	Visual Inspection	2 years	Jun-04
Rear Hopper Header	21.5" O.D. x 1.40" Min. Thk. / SA-106 Gr. C			
Downcomer to Hopper Header Upper Section	21.5" O.D. x 1" Min. Thk. / SA-106 Gr. C			
Lower Section Downcomer to Hopper Header	21.5" O.D. x 1" Min. Thk. / SA-106 Gr. C			
Downcomer Pipe to Platen Header	16" O.D. x 1.031" Ave. Thk. / SA-106 Gr. B			
Primary Superheater			2 years	Sep-08
Downleg Assemblies Points A to B&C Points B&C to D	2.5" O.D. x .165 MW / SA 210 2.5" O.D. x .180 MW / SA 210			
Inlet Header	8.625" O.D. x 1.100" Thk / SA-106- Gr. C			
Outlet Header	14" O.D. x 1.150" Thk / SA-335 P11			
High Temp Superheater	Outlet tubes - 2.5" O.D. x .260 MW SA 213 T22	PM-OUTAGE R-1 INSPECTION OF RADIANT SUPERHEATER	2 years	Sep-08
	Inlet tubes - 2.5" O.D. x .165 MW SA 213 T11			
Main Steam Inlet Header	12.750" O.D. x 1.150" Thk / SA-106- Gr. C			
Main Steam Outlet Header	14" O.D. x 1.375/1.150" Thk. / SA-335 P11			
Boiler Safeties		PM-OUTAGE R-1 INSPECTION OF BOILER SAFETY VALVES	4 years	June - 08
North West Drum Safety	Size 3", 1500 PSI @ 675 DEG POP @ 1515, CLOSE @ 1454, RELIEVE 282,746, ORFICE 3.976", DWG #G-36967-48: 6" OUTLET, Crosby Model: HC65W		4 years	June - 08
South West Drum Safety	Size 2 1/2"; 1500PSI @ 675 DEG, POP@1475, CLOSE @1416, RELIEVE 176,249, ORFICE 2.545" DWG#G-36967-48: 6" OUTLET, Crosby Model: HC65W		4 years	June - 08
East Drum Safety	Size 2 1/2", 1500PSI @ 675 DEGREES, POP@1495, CLOSE @ 1435, RELIEVE 178,616 ORFICE 2.545", DWG #G3696748: 6" OUTLET, Crosby Model: HC65W		4 years	June - 08
Superheat Steam Line Safety	Size 2 1/2", 1060 F; POP @1375, CLOSE @ 1320, RELIEVE @ 129,887, ORFICE 2.545";6", OUTLET; DWG#G3696887: Crosby Model HCA58		4 years	June - 08
Sootblower system safety	Consolidated - SIZE 2 X 3; SET @ 600 PSIG; CAP. 27,115#, STYLE 1912HTC-1-34; B/M CC2079-S14960; INDUS. VALVE-MOBILE, ALABAMA IVS#S14960, Model: 1912H		4 years	June - 08
Electromatic Relief Valve				

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM/Work Order Description	Frequency	Date of Last Inspection
LP Feed Water Heater Safeties		PM-OUTAGE R-1 FOUR YEAR PM OF L.P. HEATER SAFETY VALVES		
# 3 F.W. Heater Steam Side	TYPE 1511K-XIP; S/N BY72484; SET @ 50 PSIG; CAPACITY 550 LBS/HR; SIZE 4"; DALCO INC. #40695-		4 years	June - 08
# 3 F.W. Heater Water Side	TYPE 1982C-XLS; S/N TM29920; SET @ 275 PSIG; CAPACITY 108.2 CPM WATER; SIZE 3/4"; DALCO INC. #40695-8		4 years	June - 08
# 4 F.W. Heater Steam Side	TYPE 1511K-XIP; SET @ 50 PSIG; CAPACITY 550 LBS/HR; S/N BY72486; SIZE 2"; DALCO INC. #40695-4; INSTALLED NEW 11/2000		4 years	June - 08
# 4 F.W. Heater Water Side	Farris Engineering - SIZE 3/4" X 1"; TYPE #1870;SET PRESSURE 275#; SPRING CSCP; TAG # S-11-K ; Model: 1870		4 years	June - 08
Deaerating Heater safety valves 2 Ea.	Farris Engineering - Size 4 N 6; STYLE 1960-OL; SET @ 100 PSIG; CAPACITY 30,780 #/HR; SHOP # (NOT LISTED) TAG # S-11-8, Model: 1960		4 years	June - 08
HP Feed Water Heater Safeties		PM-OUTAGE R-1 FOUR YEAR PM OF H.P. HEATER SAFETY VALVES		
# 1 F.W. Heater Steam Side	TYPE 1811JB-6X; S/N BY72824; SET @ 450 PIG; CAPACITYN27786 #/HR; SIXE 1-1/2"; LIFT .321"; DALCO INC. #40695-1;		4 years	June - 08
# 1 F.W. Heater Water Side	TYPE 19096MC-LA-MT-FT; S/N TM29851; SET @ 2000 PSIG; CAPACITY 115CPM WATER; SIZE 3/4"; DALCO INC. #40695-7;		4 years	June - 08
# 2 F.W. Heater Steam Side	TYPE 1811HB-3X; S/N BY77106; SET @ 250; CAPACITY 9647 LBS/HR; SIZE 1-1/2"; LIFT .250"; DALCO INC. #40695-2;		4 years	June - 08
# 2 F.W. Heater Water Side	TYPE 19096MC-LA-MT-FT; S/N TM 29847; SET @ 2000 PSIG; CAPACITY 115 CPM WATER; SIZE 3/4"; DALCO INC. #40695-6;		4 years	June - 08

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
Boiler (general)		Acquisition of tube samples; waterwalls, platen superheats, and finishing superheats	2 years	Nov-09
		Chemical Cleaning	12 years	Nov-09
Economizer		Economizer Section, inspection and repair	2 years	Nov-09
		na	na	na
Inlet Header	14.75" ID SA106C			Nov-09
Element	2.25" OD x .224 MW SA178C			
Element	2" OD x .200 MW SA178C			
Element	2" OD x .250 MW SA178C			
Element	2" OD x .212 MW SA213-T2			
Unheated Outlet Stubs	2.25" OD x .224 MW SA178C			
Drum Safeties	10.5" ID SA106C			
Drum		Drum, inspection and repair	2 years	Nov-09
Downcommers	24" OD x Sch 160 SA106C			
Waterwalls		Waterwall mapping and (NDE)	2 years	Nov-09
		na	na	
Feeders	6" Sch #160 SA106C			
Risers Front	6" Sch #160 SA106B			
Risers Side	6" Sch #160 SA106B			
Risers Rear	6" Sch #160 SA106B			
FW Lower	3" OD x .318 MW SA210C			
FW Rifled	3" OD x .368 MW SA210C			
FW Upper	3" OD x .280 MW SA210C			
RW Lower	3" OD x .318 MW SA210C			
RW Rifled	3" OD x .368 MW SA210C			
RW Upper	3" OD x .280 MW SA210C			
RW Support	3.5" OD x .405 MW SA210C			
SW Lower	3" OD x .318 MW SA210C			
SW Rifled	3" OD x .368 MW SA210C			
SW Upper	3" OD x .280 MW SA210C			
Steam Supply to roof	6" Sch #160 SA106B			
Roof	2.25" OD x .220 MW SA213T11			
HRA RW Upper	1.75" OD x .190 MW SA213T2			
HRA RW Lower	1.75" OD x .167 MW SA178C			
Partition Wall Feeder	6" Sch #160 SA106C			
Partition Wall Screen	2" OD x .217 MW SA213T2			
Partition Wall Support	2.375" OD x .382 MW SA213T2			
Partition Wall Lower	2" OD x .250 MW SA178C			
Partition Wall Riser	6" Sch #160 SA106C			
HRA SW Upper	1.75" OD x .190 MW SA213T2			
HRA SW Lower	1.75" OD x .187 MW SA178C			
HRA SW Transfer Upper	6" Sch #160 SA106C			
HRA SW Transfer Lower	6" Sch #160 SA106C			
HRA SW Vestibule Feed	6" Sch #160 SA106C			
HRA SW Vestibule	2" OD x .286 MW SA213T2			
HRA SW Vestibule Corner	2.375" OD x .440 MW SA213T2			
HRA SW Vestibule Riser	6" Sch #160 SA106C			
HRA FW Support	2.25" OD x .372 MW SA213T2			
HRA FW Feeder	6" Sch #160 SA106C			
HRA Front Upper Screen	2" OD x .286 MW SA213T2			
HRA FW Lower	2" OD x .250 MW SA178C			
HRA FW Riser	6" Sch #160 SA106C			

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
Primary Superheat		Superheat sections, inspection and repair	2 years	Nov-09
Inlet	2" OD x .214 MW SA210A1			
	2.25" OD x .369 MW SA210A1			
	2.25" OD x .250 MW SA213T11			
	2" OD x .211 MW SA213T2			
"A" Platen Superheater		Superheat sections, inspection and repair	2 years	Nov-09
"B" Platen Superheater		Superheat sections, inspection and repair	2 years	Nov-09
Inlet Header	18.75" OD x 2.125 MW SA106C	Take MT readings, and replications on attachment welds	2 Years	Nov-09
Attemperator 1st Stage	20" OD		6yrs	Nov-09
Attemperator 1st Stage	20" OD		6yrs	Nov-09
Inlet Bottles	8.625" OD x 1.5 AW SA106C			
Outlet Header	8.625" OD x 1.625 AW SA106C	Take MT readings, and replications on attachment welds	2 years	Nov-09
Inlet Elements	1.75" OD x .260 MW SA213T11			Nov-09
Outlet Elements	1.75" OD x .300 MW SA213T22			Nov-09
Lead Elements	1.75" OD x .238 MW SA213TP304H			
Risers	4" OD x .429 MW SA213T2			
Finish Superheat		Superheat sections, inspection and repair	2 years	Nov-09
		na	na	na
Inlet Header	20" OD x 2.375 MW SA335P11			
Attemperator 2nd Stage	20" OD	Boroscopic examination of header, nozzle removed and inspected	6 years	Nov-09
Attemperator 2nd Stage	20" OD	Boroscopic examination of header, nozzle removed and inspected	6 years	Nov-09
Outlet Header	31.5 OD x 5.375 MW SA335P22			Nov-09
Leg 1 Elements	2.25" OD x .230 MW SA213T11			
	2.25" OD x .282 MW SA213TP304H			
	2.25" OD x .413 MW SA213T22			
	2.25" OD x .363 MW SA213T22			
Leg 2 Elements	2.25" OD x .482 MW SA213T22			
Leg 3 Elements	2" OD x .253 MW SA213TP304H			
Leg 4 Elements	2" OD x .293 MW SA213TP304H			
	2" OD x .225 MW SA213TP304H			
Reheater		Reheat Section, Inspection and repair	2 Years	Nov-09
		na	na	na
Inlet Header	30" ID SA335-P2			
Inlet vertical legs	2.5" OD x .180 MW SA178A			
Unheated outlet tubes	2.25" OD x .180 MW SA213-T22			
Outlet Header	34" ID SA335P-22			
Attemperator Spray (Left)				
Attemperator Spray (Right)				
Horizontal legs 1-9	2.5" OD x .180 MW SA178A			
Horizontal legs 10-13	2.5" OD x .180 MW SA213T2			
Horizontal legs 14-15	2.25" OD x .180 MW SA213T11			
Horizontal legs 16-17	2.25" OD x .200 MW SA213T22			
Horizontal leg 18	2" OD x .150 MW SA213TP304			
Headers		na	na	Nov-09
Boiler Feed Pump Suction and Discharge Piping		Perform Guided Long Wave Testing on this piping to determine thinning and Flow Assisted Corrosion	6 Years	Nov-09
DA Storage Tank		Perform MT inspection on all circumferential welds, longitudinal welds, nozzles, exterior leg supports, and interior attachment welds. Perform UT Measurements on the heads, shell, and downcomers.	2 years	Nov-09
DA Heater		Perform MT inspection on all circumferential welds, longitudinal welds, nozzles, exterior leg supports, and interior attachment welds. UT Measurements should be taken, and anything under .400" should be marked up for weld repairs.	2 years	Nov-09

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
HIGH ENERGY PIPING				
MAIN STEAM PIPING TO TURBINE	23.25" OD x 3.442 MW SA335P22	MT Connections and Nozzles, Replications on Circ. Welds, MT Circ Welds, MT Hanger Attachments, UT Circ. Welds. A Section of the piping will be inspected each outage. Each section is about 1/3 of the total Main Steam Piping. Thus, a complete inspection of the entire main steam piping system will be performed every six years.	6 years	Nov-09
	19" OD x 2.817 MW SA335P22			
HOT REHEAT PIPING TO TURBINE	32.5" OD x 1.375 SA691Gr2¼Cr	MT Connections and Nozzles, Replications on Circ. Welds, MT Circ Welds, MT Hanger Attachments, UT Circ. Welds, MT and UT Longitudinal Welds. A Section of the piping will be inspected each outage. Each section is about 1/3 of the total Hot Reheat Piping. Thus, a complete inspection of the entire hot reheal piping system will be performed every six years.	6 Years	Nov-09
	32.5" OD x 1.375 SA691Gr2¼Cr			
COLD REHEAT PIPING FROM TURBINE	33" OD x .75 MW SA155GrKC65	MT Connections and Nozzles. MT Pipe Hanger Attachment Welds, UT Circumferential Welds. Replications on Circ. Welds.	6 Years	Nov-09
	24" OD x Sch 40 MW SA155GrKC65			
CRITICAL PIPE HANGERS				
Main Steam Hangers				
MSH-1			2 years	Nov-09
MSH-1			2 years	Nov-09
MSH-2			2 years	Nov-09
MSH-3			2 years	Nov-09
MSH-4			2 years	Nov-09
MSH-4			2 years	Nov-09
MSH-5			2 years	Nov-09
MSH-6			2 years	Nov-09
MSH-7			2 years	Nov-09
MSH-7			2 years	Nov-09
MSH-8			2 years	Nov-09
MSH-8			2 years	Nov-09
MSH-9			2 years	Nov-09
MSH-10			2 years	Nov-09
MSH-11			2 years	Nov-09
MSH-11			2 years	Nov-09
MSH-12			2 years	Nov-09
MSH-13			2 years	Nov-09
MSH-14			2 years	Nov-09
MSH-15			2 years	Nov-09
MSH-16			2 years	Nov-09
MSH-17			2 years	Nov-09
MSH-18			2 years	Nov-09
MSH-19			2 years	Nov-09
MSH-20			2 years	Nov-09

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
Cold Reheat Hangers				
CRH-1			2 years	Nov-09
CRH-1			2 years	Nov-09
CRH-2			2 years	Nov-09
CRH-3			2 years	Nov-09
CRH-4			2 years	Nov-09
CRH-5			2 years	Nov-09
CRH-6			2 years	Nov-09
CRH-6			2 years	Nov-09
CRH-7			2 years	Nov-09
CRH-8			2 years	Nov-09
CRH-9			2 years	Nov-09
CRH-10			2 years	Nov-09
CRH-11			2 years	Nov-09
CRH-12			2 years	Nov-09
CRH-13			2 years	Nov-09
CRH-14			2 years	Nov-09
CRH-14			2 years	Nov-09
CRH-15			2 years	Nov-09
CRH-16			2 years	Nov-09
CRH-17			2 years	Nov-09
CRH-18			2 years	Nov-09
CRH-19			2 years	Nov-09
CRH-19			2 years	Nov-09
CRH-20			2 years	Nov-09
CRH-21			2 years	Nov-09
CRH-22			2 years	Nov-09
CRH-23			2 years	Nov-09
CRH-23			2 years	Nov-09
CRH-24			2 years	Nov-09
CRH-25			2 years	Nov-09
CRH-26			2 years	Nov-09
CRH-27			2 years	Nov-09
CRH-28			2 years	Nov-09
CRH-28			2 years	Nov-09
CRH-28			2 years	Nov-09
CRH-29			2 years	Nov-09

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
Hot Reheat Hangers				
HRH-1			2 years	Nov-09
HRH-2			2 years	Nov-09
HRH-3			2 years	Nov-09
HRH-4			2 years	Nov-09
HRH-4			2 years	Nov-09
HRH-5			2 years	Nov-09
HRH-6			2 years	Nov-09
HRH-7			2 years	Nov-09
HRH-7			2 years	Nov-09
HRH-8			2 years	Nov-09
HRH-8			2 years	Nov-09
HRH-9			2 years	Nov-09
HRH-10			2 years	Nov-09
HRH-11			2 years	Nov-09
HRH-11			2 years	Nov-09
HRH-12			2 years	Nov-09
HRH-13			2 years	Nov-09
HRH-14			2 years	Nov-09
HRH-15			2 years	Nov-09
HRH-16			2 years	Nov-09
HRH-17			2 years	Nov-09
HRH-17			2 years	Nov-09
HRH-18			2 years	Nov-09
HRH-18			2 years	Nov-09
SAFETY VALVES				
Boiler Drum Safety Valves				
RV-1 Safety Valve	Crosby, size 3M6, style HE-96W, dwg# DSC-58456-19 Rev.A	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-2 Safety Valve	Crosby, size 3M6, style HE-96W, dwg# DSC-58456-19 Rev.A	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-3 Safety Valve	Crosby, size 3M6, style HE-96W, dwg# DSC-58456-19 Rev.A	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
RV-4 Safety Valve	Crosby, size 3M6, style HE-96W, dwg# DSC-58456-19 Rev.A	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-5 Safety Valve	Crosby, size 3M6, style HE-96W, dwg# DSC-58456-19 Rev.A	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Superheat Steam Safety Valves				
RV-9 Safety Valve	Crosby, size 3M6, style HCA-98W, dwg# DS-C-56551-18 Rev.O	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-10 Safety Valve	Crosby, size 3M6, style HCA-98W, dwg# DS-C-56551-18 Rev.O	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Hot Reheat Safety Valves				
RV-21 Safety Valve	Crosby style 4Q8, style HCA-38W, dwg# DS-C-61135-10 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-22 Safety Valve	Crosby style 4Q8, style HCA-38W, dwg# DS-C-61135-10 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Cold Reheat Safety Valves				
RV-15 Safety Valve	Crosby style 4Q8, style HC-36W, dwg# DS-C-60778-7 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
RV-16 Safety Valve	Crosby style 4Q8, style HC-36W, dwg# DS-C-60778-7 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
RV-17 Safety Valve	Crosby style 6R8, style HC-36W, dwg# DS-C-60779-17 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
RV-18 Safety Valve	Crosby style 6R8, style HC-36W, dwg# DS-C-60779-17 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
RV-19 Safety Valve	Crosby style 6R8, style HC-36W, dwg# DS-C-60779-17 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
RV-20 Safety Valve	Crosby style 6R8, style HC-36W, dwg# DS-C-60779-17 Rev. A	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09

Unit Wilson

Frequency and Dates of Last Inspections
From the Big Rivers Boiler Condition Spreadsheet provided in AG 1-140

Equipment (Section)	Tube Size/Material	PM Description	Frequency	Date of Last Inspection
Auxillary Steam Safety Valves				
RV-24 (1) Safety Valve	Consolidated 6", 600# Std. RF; Style - 1912-QT-TD-34; LG8834; Dwg. # 619-26-002 Serial # TG-30723	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-24 (2) Safety Valve	Consolidated 6", 600# Std. RF; Style - 1912-QT-2-TD-34-MS-RF LG8834; Dwg. # 619-26-002 Serial # TG-30724	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-25 (1) Safety Valve	Consolidated 6", 300# Std. RF; Style - 1912-30R/P2-1 LG8834; Dwg. # 619-26-003 Serial #: TP-38600	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-25 (2) Safety Valve	Consolidated 6", 300# Std. RF; Style - 1912-30R/P2-1 LG8834; Dwg. # 619-26-003 Serial #: TL-21965	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-26 Safety Valve	Consolidated 8", 300# Std. RF; Style - 1912-30T/P2-1 LG9034; Dwg. # 619-26-004 Serial #: TG-30725	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Steam Coil Condensate Drain Tank Safety Valves				
RV-37 (1) Safety Valve	Consolidated 2", 150# Std. RF; Style - 1905 JC-CC-TD-34; Dwg. # 619-26-006 Serial #: TP40963	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
RV-37 (2) Safety Valve	Consolidated 2", 150# Std. RF; Style - 1905 Jt P1-1; Dwg. # 619-26-006 Serial #: TG30739	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Sootblower Safety Valves				
Sootblower Safety Valve 1	Consolidated 2", 485 Set Pressure, Serial # TN22671, Type 1910-00HT-T-CC-TD-34	Boiler, Safety Valves, Inspect & Repair	4 years	Mar-08
Sootblower Safety Valve 2	Consolidated 4", 600 # Class Model #: 1912LT-TD Serial # TE94443	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
Sootblower Safety Valve 3	Consolidated 4", 900 # Class Model #: 1924LT-1-TD Serial # TE94444	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
Sootblower Safety Valve 4	Consolidated 4", 600 # Class Model #: 1912-LT-1 Serial # TE94442	Boiler, Safety Valves, Inspect & Repair	2 years	Nov-09
Feedwater Heater Safety Valves				
Heater #2 Safety Valve	Consolidated 6", 150# Class Dwg. # 605-00-010 Model #: 1905QC-1 Serial # TE70740	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Heater #3 Safety Valve	Consolidated 6", 150# Class Dwg. # 605-00-010 Model #: 1905QC-1 Serial # TE70866	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Heater #4 Safety Valve	Consolidated 6", 150# Class Dwg. # 605-00-010 Model #: 1905QT-1 Serial # TE70868	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Heater #5 Safety Valve	Consolidated 2 1/2" 300# Class Dwg. # 1811 LA20 Model #: 1811LA-20 Serial # BV08890	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Heater #6 Safety Valve	Consolidated 4", 300 # Class Dwg. # 605-00-011 Model #: 1910NC-1 Serial # TE70730	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09
Heater #7 Safety Valve	Consolidated 4", 600 # Class Dwg. # 605-00-012 Model #: 1912LT-1 Serial # TE70734	Boiler, Safety Valves, Inspect & Repair	2 Years	Nov-09

Exhibit Holloway-3

RUS Communications on Creep Testing

Ralph Ashworth

From:	Billie Richert
Sent:	Tuesday, December 11, 2012 3:39 PM
To:	James J. Murray (james.murray@wdc.usda.gov) (james.murray@wdc.usda.gov)
Cc:	Ralph Ashworth
Subject:	Follow-up to your two questions re: Depreciation Study
Attachments:	Creep Testing All Units Next Schedule.xlsx

Jim,
To follow-up on your two questions related to our depreciation study:

1) All of the major maintenance that has been deferred is scheduled to be completed by the end of 2015.
2) Next creep testing scheduled by unit – see attached

Thanks,
Billie

Item 1 Completion of Creep Testing

The following table provides a summary of the most recent testing performed for each generation unit.

Plant	Last Test	Problems Found	Description	Action Taken
Coleman 1	May 2008	1	Hot reheat hanger attachment.	Addressed immediately through appropriate repairs.
Coleman 2	October 2010	0	No deficiencies found.	
Coleman 3	June 2009	1	Indication of early stage creep.	No operational limits, per EPRI guidelines. Retest in 3-5 years.
Green 1	November 2011	0	No deficiencies found.	
Green 2	May 2009	0	No deficiencies found.	
HMP&L 1	April 2012	0	No relevant indications.	
HMP&L 2	April 2010	0	No evidence of micro cracking or creep damage.	
Wilson 1	June 2008	1	Operating stress well within limits.	Retest in 5-10 years.
	November 2009	0	No indications found.	

Exhibit Holloway-4

RUS Communications on Deferred Maintenance

Big Rivers
ELECTRIC CORPORATION

201 Third Street
P.O. Box 24
Henderson, KY 42419-0024
270-827-2561
www.bigrivers.com

February 6, 2013

Mr. Chris Tuttle
Acting Deputy Assistant Administrator
Rural Utilities Service-Electric Program
United States Department of Agriculture
Room No. 5135-S
1400 Independence Avenue, S.W.
Stop 1510
Washington, D.C. 20250

Subject: Kentucky 62 - Big Rivers Electric Corporation

Dear Mr. Tuttle:

Please refer to your letter to me of December 27, 2012, approving the new depreciation rates proposed by Big Rivers Electric Corporation ("*Big Rivers*"). A copy of that letter is attached for your convenience. In that letter you conclude that certain Big Rivers' major maintenance and inspection practices, as described in the Executive Summary of the Burns & McDonnell Depreciation Study, are not acceptable to the Rural Utilities Service ("*RUS*"). You direct that Big Rivers "needs to resume their scheduled major inspections and maintenance per prudent utility operations promptly," and ask that Big Rivers inform you of its timeline for getting that matter resolved.

Big Rivers takes very seriously its obligations to its Members and the RUS to maintain its assets in accordance with prudent utility practice. The purposes of this letter are to furnish assurance that Big Rivers is properly inspecting and performing major maintenance on its assets, and to provide the maintenance schedule Big Rivers developed in May of 2012 to perform certain maintenance projects that had been deferred.

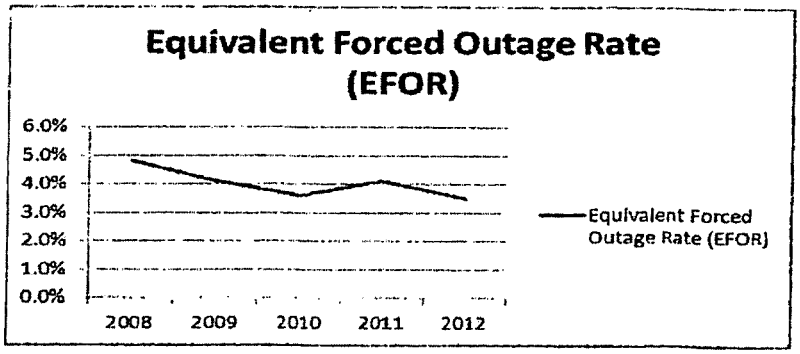
Big Rivers has selectively deferred certain inspection and maintenance activities since 2009 to assure that it will achieve its financial covenant performance requirements during a period of depressed wholesale power market prices and an unusually weak economy. But Big Rivers did not stop maintaining its assets. It selectively chose certain activities to complete, and others to defer, in order to continue to maintain a prudent level of maintenance while Big Rivers was adjusting to an economy in recession.

As a result of those efforts, Big Rivers' generating fleet has been very reliable since the closing of the Unwind Transaction in July 2009, and has consistently performed in the top quartile of its peer group in Equivalent Forced Outage Rate ("*EFOR*"), which we benchmark through Navigant's GKS system. The table below shows that Big Rivers' generating plant reliability has improved over the last five years, indicating the effectiveness of Big Rivers' maintenance program.

Big Rivers Generating Fleet	**2008**	**2009**	**2010**	**2011**	**2012**
Equivalent Forced Outage Rate (EFOR) *	4.8%	4.1%	3.6%	4.1%	3.5%

*EFOR (Lower is Better)

The following graph illustrates the downward trend (lower is better) in EFOR over the last five years.



Burns & McDonnell agrees with the prudency of Big Rivers' past maintenance practices and future maintenance plans in testimony filed with the Kentucky Public Service Commission on January 15, 2013, with Big Rivers' application for a general adjustment in rates. An excerpt of that testimony is attached for your information, and the full testimony is available under tab 71 of the copy of the application that Big Rivers sent to RUS on January 15, 2013.

The deferred maintenance schedule Big Rivers developed in May of 2012, and provided to Mr. James J. Murray by email dated December 12, 2012, affirms Big Rivers' intention to continue to perform major maintenance on its assets in a prudent and timely manner. That table is reproduced below, and remains unchanged from the version provided in December of 2012, and shows Big Rivers' timeline for performing the selected items of maintenance that were

previously deferred. Big Rivers hopes this information allays RUS concerns. Please contact me if you have any further questions.

Deferred Maintenance Schedule

The following table provides a summary of the deferred outages and when they will be completed.

Plant	Original Outage Schedule	Deferred Maintenance To Be Completed
Coleman 1	February 2011	[redacted]
Coleman 2	March 2013	[redacted]
Coleman 3	May 2012	[redacted]
Green 1	March 2012	[redacted]
Green 2	March 2011	[redacted]
HMP&L 1	May 2011	March 2012
HMP&L 2	March 2012	[redacted]
Wilson 1	September 2011	[redacted]

* In August, 2013, coinciding with the Century Aluminum power sales contract termination, the current outage plans depict the Wilson unit temporarily idled until Big Rivers can secure replacement load. Big Rivers is still evaluating this strategy and the current plan is subject to change. If the Wilson plant is not idled the deferred maintenance will be completed in [redacted]

Sincerely yours,

Mark A. Bailey

Mark A. Bailey
President and CEO
Big Rivers Electric Corporation

Attachments
c: Power Supply Division

USDA Rural Development

United States Department of Agriculture
Rural Development

DEC 27 2012

Mr. Mark A. Bailey
President & Chief Executive Officer
Big Rivers Electric Corporation
P. O. Box 24
201 Third Street
Henderson, Kentucky 42419-0024

Dear Mr. Bailey:

This is in response to the letter dated November 20, 2012, from Ms. Billie J. Richert, to Mr. John Padalino, Acting Administrator of Rural Utilities Service (RUS), regarding Big Rivers Electric Corporation's (Big Rivers) request for RUS approval to revise the depreciation rates as recommended in the Comprehensive Depreciation Study Report (Depreciation Study) prepared for Big Rivers by Burns & McDonnell Engineering Company, Inc. dated November 2012.

In the Depreciation Study, Burn & McDonnell stated on Page ES-3 that since the Unwind Closing 2009, Big Rivers has not performed major maintenance such as valve inspections and turbine generator inspections on a schedule consistent with prudent utility operations. This is not acceptable to RUS and Big Rivers needs to resume their scheduled major inspections and maintenance per prudent utility operations promptly. **Please let us know of your timeline for getting this matter resolved.**

We find that the depreciation rate analysis that was performed based on the electric generation and transmission historical plant records of Big Rivers as of July 31, 2012 is acceptable; therefore, RUS hereby approves the new depreciation rates for the electric generation and transmission asset of Big Rivers included in above Depreciation Study as follows:

Account	Description	Existing Rates	Proposed Rates
Steam Production Plant			
340	Land	N/A	N/A
311	Structures	1.38%	1.38%
312	Boiler Plant	1.88%	2.02%
312 A-K	Boiler Plant - Environmental Compliance	2.28%	2.43%
312 L-P	Short-Life Production Plant - Environmental	20.22%	15.95%
312 V-Z	Short-Life Production Plant - Other	14.39%	25.38%

314	Turbine	1.91%	1.96%
315	Electrical Equipment	1.99%	2.03%
316	Miscellaneous Equipment	3.78%	4.04%
Combustion Turbine (CT) Production Plant			
341	CT - Structures	1.17%	1.06%
342	CT – Fuel Holders & Accessories	9.10%	9.92%
343	CT – Prime Movers	3.02%	3.02%
344	CT - Generators	0.50%	0.35%
345	CT – Access. Electrical Equipment	2.05%	2.93%
Transmission			
350	Land	N/A	N/A
352	Structures	1.90%	1.94%
353	Station Equipment	2.23%	2.29%
354	Towers	1.42%	1.36%
355	Poles	2.06%	2.03%
356	Lines	1.69%	1.81%

Depreciation rates for General Plant type facilities may be based on a borrower's experience and these rates do not require RUS approval.

Please let us know if we can be of further assistance.

Sincerely,

CHRIS TUTTLE
Acting Deputy Assistant Administrator
Rural Utilities Service-Electric Program

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR A GENERAL ADJUSTMENT IN RATES	)))	Case No. 2012-00535

DIRECT TESTIMONY

OF

TED J. KELLY
PRINCIPAL, BURNS & McDONNELL

ON BEHALF OF

BIG RIVERS ELECTRIC CORPORATION

FILED: January 15, 2013

5. A discussion of the operating and maintenance procedures for each production facility;

6. An analysis of external factors that may impact each facility's useful life;

7. An opinion, based on the study's findings, regarding the remaining life of each facility;

8. A discussion of the composition of the transmission system; and

9. An opinion, based on the study's findings, regarding remaining life of each substation.

Q. How is this used to determine depreciation rates?

A. The remaining life of each facility is provided in the Engineering Assessment and is a component that is considered in the calculation of depreciation rates. One important component of determining the remaining life of Big Rivers' facilities involves an evaluation of the maintenance activities performed by Big Rivers and the resultant operating condition of the facilities.

Q. Did RUS comment on Big Rivers maintenance practices mentioned in the Depreciation Study Report?

A. Yes. RUS indicated that Big Rivers needs to resume its scheduled major inspections and maintenance practices. RUS may have misunderstood what we were indicating in the report. As a result of prevailing resource constraints, Big Rivers selectively deferred some major maintenance while

continuing routine maintenance. Inspections performed by Burns & McDonnell and a review of operating results over the last several years indicated no adverse conditions as a result of this short term deferral. Burns & McDonnell did review Big Rivers' plans, developed in May 2012, to reschedule the maintenance activities that are described by Bob Berry in his testimony. In light of the favorable operating results and assuming timely rescheduling of the deferred maintenance, in our opinion Big Rivers showed good judgment in the use of available resources and its facilities are being reasonably and prudently operated.

E. Facilities Review

Q. What facilities were reviewed?

A. A description of each of the facilities physically inspected and reviewed by Burns & McDonnell is provided in the Engineering Assessment of the 2012 Depreciation Study. (*See* Exhibit Kelly-1, Tables II-1 through II-8, pp. II-2 through II-6.)

i. Robert D. Green Plant

Q. Describe the Robert D. Green facility.

A. The Robert D. Green Plant ("Green Plant") is located on the Sebree site near Sebree, Kentucky, along with the Robert A. Reid Plant ("Reid Plant") and Henderson Municipal Power & Light Station Two ("HMP&L Station

Entire Page is confidential and is redacted

Exhibit Holloway-5

Layup Adjustment for Wilson Depreciation Expenses

Layup Adjustment for Wilson Annual Depreciation Expenses

Proposed Depreciation Expenses	**$19,203,299**
Depreciation Expenses Adjusted for Layup	**$16,295,508**
Layup Adjustment	**($2,907,791)**

Note: Current Depreciation Expenses **$18,543,752**

Table ES-1 Adjusted to Show Wilson Only Costs

Table ES-1: 2012 Wilson Depreciation Rates as Proposed

Account	Description	As of July 31, 2012 Plant Balance	Reserve Balance	Reserve Ratio	Existing Depreciation Rate	Average Service Life	Remaining Service Life	Net Salvage Factor	Proposed Depreciation Rate	Annual Depreciation Expense Existing	Proposed	Variance
		- $ -	- $ -		- % -	- Years -	- Years -	- % -	- % -	- $ -	- $ -	- $ -
PRODUCTION PLANT [1]												
311	Structures	73,327,591	48,027,081	65.5	1.38%	62.0	28.2	-4.5%	1.38%	1,011,921	1,014,701	2,780
312	Boiler Plant	402,955,640	210,819,217	52.3	1.88%	59.5	26.1	-5.0%	2.02%	7,575,566	8,137,672	562,106
312 A-K	Boiler Plant - Environment Compliance	263,864,442	101,746,118	38.6	2.28%	53.0	26.3	-2.0%	2.41%	6,016,109	6,361,041	344,932
312 L-P	Short-Life Production Plant -Environmental	7,312,503	1,721,938	23.5	20.22%	10.0	4.8	0.0%	15.93%	1,478,588	1,164,701	(313,887)
314	Turbine	128,877,902	72,495,838	56.3	1.91%	59.5	26.5	-8.2%	1.96%	2,461,568	2,525,184	63,616
315	Electric Equipment	35,103,875	21,027,386	59.9	20.22%	50.9	18.3	0.0%	2.19%	7,098,004	769,207	(6,328,797)
316	Miscellaneous Equipment	1,255,086	16,017	1.3	14.39%	57.5	24.3	0.0%	4.06%	180,607	50,990	(129,616)
	Subtotal	$876,338,079	$434,810,193							$18,543,752	$19,203,299	$659,547

Note: Plant Balances from Amounts Provided in response to KIUC 2-20(a)
Reserve Ratios used to calculate Reserve Balance for Wilson Accounts

Table ES-1 Adjusted to Show Wilson Only Costs

Table ES-1: 2012 Wilson adjusted Depreciation Rates Adding 4 Years to Remaining Service Life for Layup

Account	Description	As of July 31, 2012 Plant Balance	Reserve Balance	Reserve Ratio	Existing Depreciation Rate	Average Service Life	Remaining Service Life	Net Salvage Factor	Proposed Depreciation Rate	Annual Depreciation Expense Existing	Proposed	Variance
		- $ -	- $ -		- % -	- Years -	- Years -	- % -	- % -	- $ -	- $ -	- $ -
PRODUCTION PLANT [1]												
311	Structures	73,327,591	48,027,081	65.5	1.38%	62.0	32.2	-4.5%	1.21%	1,011,921	888,651	(123,270)
312	Boiler Plant	402,955,640	210,819,217	52.3	1.88%	59.5	30.1	-5.0%	1.75%	7,575,566	7,056,254	(519,312)
312 A-K	Boiler Plant - Environment Compliance	263,864,442	101,746,118	38.6	2.28%	53.0	30.3	-2.0%	2.09%	6,016,109	5,521,300	(494,809)
312 L-P	Short-Life Production Plant -Environmental	7,312,503	1,721,938	23.5	20.22%	10.0	8.8	0.0%	8.69%	1,478,588	635,291	(843,297)
314	Turbine	128,877,902	72,495,838	56.3	1.91%	59.5	30.5	-8.2%	1.70%	2,461,568	2,194,012	(267,556)
315	Electric Equipment	35,103,875	21,027,386	59.9	20.22%	50.9	22.3	0.0%	1.80%	7,098,004	631,233	(6,466,771)
316	Miscellaneous Equipment	1,255,086	16,017	1.3	14.39%	57.5	28.3	0.0%	3.49%	180,607	43,783	(136,824)
	Subtotal	$876,338,079	$434,810,193							$18,543,752	$16,295,508	($2,248,244)

Note: Plant Balances from Amounts Provided in response to KIUC 2-20(a)
Reserve Ratios used to calculate Reserve Balance for Wilson Accounts
4 years added to remaining service life respresents Wilson forecasted layup

Exhibit Holloway-6

Allocation of Transmission Costs to Customer Classes

As Filed in Wolfram 4.2 (PSC 2-36 revision to Wolfram 4) Allocation of Transmission Costs to Customer Classes

	Notes	Rurals	Large Industrials	Alcan Smelter	Century Smelter	Total System
Transmission Revenue Requirement	1	$ 15,037,290	$ 3,994,404	$ 12,476,695	$ -	$ 31,508,389
12 CP Demand Allocators	2	5,322,297	1,413,779	4,416,000	-	11,152,076

Allocation of Transmission Costs if Century Continues to Operate as Transmission Only Customer

Transmission Revenue Requirment	3	$ 9,901,763	$ 2,630,237	$ 8,215,660	$ 10,760,729	$ 31,508,389
12 CP with Century Smelter	4	5,322,297	1,413,779	4,416,000	5,784,000	16,936,076

Note

1 See page 16 of 16 of Wolfram 4.2
2 See page 13 of 16 of Wolfram 4.2
3 Calculated
4 From Coincident Peak forecasts provideed in response to AG 1-234

Case No. 2012-00535
Exhibit Holloway-6
Page 1 of 1