Ameren UE Exhibit No. 123
Case No(s). ER-2007-0002
Date 3-26-07 Rptr KF

Subject: RE: OutputDate: Fri, 8 Dec 2006 11:43:51 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: OutputThread-Index: Acca59RPe6p5PQw2TWmVtYykwhqepAAB/4JQFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>Cc: "Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-08_07:2006-12-08,2006-12-08,2006-12-08 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0611300000 definitions=main-0612080012X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael,

Staff is having Ameren conduct a test burn on Venice Unit 5 in December.

In your attached model you show 3252 mwh being generated by Venice 5 during December. Can you identify how many of these December 3252 mwh's went towards making interchange sales in the month?

If yes, we need a quick turnaround on this. Greg has a meeting at 1:30 pm on this subject. Apparently Ameren wants to include the cost difference (normal running coal vs. running gas for this test burn over 3 days) include in the cost of service.

Thanks -- John

FILED[3]
APR 16 2007
Missouri Public Service Commission

X-Symantec-TimeoutProtection: 0Subject: FW: Updated NSIDate: Fri, 8 Dec 2006 15:14:35 -0600X-MS-Has-Attach: yesX-MS-TNEF-Correlator: Thread-Topic: Updated NSIThread-Index: AccbCG2bTldrRMwAQV6vPW30QtnKdwAANJxwAAEavVA=From: "Cassidy, John" <john.cassidy@psc.mo.gov>To: <Mrahrer@emelar.com>, "Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-08_07:2006-12-08,2006-12-08,2006-12-08 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0611300000 definitions=main-0612080016X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael - Attached below is staff's normalized net system input to use in the production cost model. Please call me with any questions. 573-526-3487.

John

From: Hagemeyer, Jeremy **Sent:** Friday, December 08, 2006 2:42 PM **To:** Cassidy, John **Subject:** FW: Updated NSI

EXHIBIT
PENGAD 800-631-6989
L Rahrer
1-16-07 SP

From: Lange, Shawn **Sent:** Friday, December 08, 2006 2:36 PM **To:** Meyer, Greg; Hagemeyer, Jeremy **Subject:** Updated NSI

Please disregard the previous email and use this NSI. Thanks <<Test year hourlyER-2007-0002(AUE).xls>>

Shawn Lange Utility Engineering Specialist II MO Public Service Commission (573) 751-7517 (voice) (573) 526-0145 (fax) shawn.lange@psc.mo.gov

Test year hourlyER-2007-0002(AUE).xls

Subject: RE: FW: Updated NSIDate: Fri, 8 Dec 2006 17:06:00 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: FW: Updated NSIThread-Index: AccbGPOdmXAOeigmTqancR+I+m9BqAABGWpwFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-08_07:2006-12-08,2006-12-08,2006-12-08 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0611300000 definitions=main-0612080017X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Use Wthr Normal tab. That represents weather normalized nsi.

From: Michael Rahrer [mailto:mrahrer@emelar.com] **Sent:** Friday, December 08, 2006 4:32 PM**To:** Cassidy, John**Subject:** Re: FW: Updated NSI

John:What worksheet do I use (Normalized, Wthr Normal or Actual)?MichaelAt 04:14 PM 12/8/2006, you wrote:

> Michael - Attached below is staff's normalized net system input to use in the production cost model. Please call me with any questions. 573-526-3487.John
>
> **From:** Hagemeyer, Jeremy **Sent:** Friday, December 08, 2006 2:42 PM **To:** Cassidy, John **Subject:** FW: Updated NSI
>
> **From:** Lange, Shawn **Sent:** Friday, December 08, 2006 2:36 PM **To:** Meyer, Greg; Hagemeyer, Jeremy **Subject:** Updated NSI Please disregard the previous email and use this NSI. Thanks <<Test year hourlyER-2007-0002(AUE).xls>> *Shawn Lange* Utility Engineering Specialist II MO Public Service Commission (573) 751-7517 (voice) (573) 526-0145 (fax) shawn.lange@psc.mo.gov

---

Subject: RE: Ameren BenchmarkDate: Sun, 10 Dec 2006 17:21:37 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Ameren BenchmarkThread-Index: AccbfAgLN/Bia8XoR4uEtZ9fcxKhFwBNc9YgFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164

definitions=2006-12-11_01:2006-12-08,2006-12-10,2006-12-10 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0611300000 definitions=main-0612100020X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael -- That appears to be correct. That was Tim's updated direct

filing spreadsheet file. John

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Saturday, December 09, 2006 4:22 AM

To: Cassidy, John

Subject: Ameren Benchmark

John:

Getting into the testimony. Question for you. I am saying where I got

the Ameren benchmark information and re-checking it to make sure.

I am using spreadsheet file: FBREPORT_PSC05_SEP8.XLS and the worksheets

shown below.

Net generation from worksheet: Net GWH (monthly) Cost from worksheet:

Cost & Revenue BTUs from worksheet: GBTU Heat rates from worksheet: HEAT

RATE

In all worksheets, I am using CASE: WS.

Is all of the above correct?

Michael

Subject: RE: Long WeekendDate: Mon, 11 Dec 2006 09:58:26 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Long WeekendThread-Index: AccdN5NpEYcBcmGUSqO3LsLpiC9lcwABT5bQFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-11_03:2006-12-11,2006-12-10,2006-12-11 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0611300000 definitions=main-0612110013X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael -- Use the 1/1/05 to 6/30/05 FPC data as if it were 1/1/06 to 6/30/06. What I forwarded to you for FPC is what we will use. There are no changes to the FPC data that we sent to you.
John

>-----Original Message-----
>From: Michael Rahrer [mailto:mrahrer@emelar.com]
>Sent: Monday, December 11, 2006 12:41 AM
>To: Cassidy, John
>Subject: Long Weekend
>
>John:
>
>Spent most of the time this weekend working on verifying the benchmark
>run and the benchmark related testimony. Benchmark run and most of the
>benchmark testimony is ready for you.
>
>I started making some runs with the new load. It is for 7/1/05 to
>6/30/06. What do I do about the forward price curve? The values you
>gave me were for 1/1/05 to 12/31/05. Do I use the 1/1/05 to 6/30/05
>values for 01/01/06 to 06/30/06 values, or do I use something else?
>
>Plus:
>
>Labadie 1 has a planned outage from 3/17/05 to 6/3/05. Does any of
>that translate to the 07/01/05 to 06/30/06 year?
>
>Same with Meramec 1, planned outage 03/12/05 to 05/19/05
>

>Same with Rush Island 1, planned outage from 02/19/05 to 04/01/05

>

>I will be here all Monday and Tuesday. Have plans for Wednesday until

>about 2pm. Here all day Thursday and all Friday afternoon. Testimony

>is due on Thursday right?

>

>Do you want me to send you the testimony I have now?

>

>Michael

Subject: Fuel RunDate: Mon, 11 Dec 2006 10:10:15 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Fuel RunThread-Index: AccdPteo8fVK8VaJQFuGGs9fKh9P5Q==From: "Cassidy, John" <john.cassidy@psc.mo.gov>To: <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-11_03:2006-12-11,2006-12-10,2006-12-11 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0611300000 definitions=main-0612110013X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael:

We will need a fuel run based on the new weather normalized net system input with EEI (Joppa) and without EEI.

John

From: Mantle, Lena **Sent:** Monday, December 11, 2006 10:58 AM **To:** Bender, Leon **Subject:** FW: URGENT INFORMATION REGARDING WORKPAPERS FOR AMEREN GAS & ELECTRIC **Importance:** High

Make sure that Michael is aware that we need his work papers and work out how we can get them.

Thanks Lena

==

Subject: RE: New Staff RunsDate: Mon, 11 Dec 2006 12:48:33 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: New Staff RunsThread-Index: AccdU7SnuDkYflqMQWCDlArfHLDRHwAABHHQFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164

definitions=2006-12-11_03:2006-12-11,2006-12-10,2006-12-11 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0611300000 definitions=main-0612110018X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael – We are not trying to redo any inputs at this stage. I just wanted the headings to be labeled 12 mos. Ending 6/30/06 instead of 12/31/05 - without redoing any inputs. Keep everything like we had for calendar year ending 12/31/05. The planned outages will stay the same. Taum Sauk will stay in. What we need is the run to reflect all of the 16 points we went over last week via email and also to reflect the new weather normalized net system input that we sent to you last week. Then we need one run with eei and one run without eei. Greg and I will call you this afternoon to discuss the fuel runs and what they should include.

John

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Monday, December 11, 2006 12:35 PM

To: Cassidy, John

Subject: New Staff Runs

John:

In the new 7/1/05 to 6/30/06 run, do we include Taum Sauk?

Still need an answer about the units who have a planned outage during 1/1/05 through 6/30/05, do I move those planned outages into 2006? Or do you have a new planned outage schedule for 2006?

Michael

Subject: When you finish the fuel run Date: Mon, 11 Dec 2006 15:44:29 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: When you finish the fuel run Thread-Index: AccdbYIBnHqklxueT0uhGCWyz8rLyg==From: "Cassidy, John" <john.cassidy@psc.mo.gov>To: <mrahrer@emelar.com>, "Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-11_03:2006-12-11,2006-12-10,2006-12-11 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612110024X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Could you develop a schedule that shows the MWH's of interchange sales that were made for the year by each unit (ie. EEI, Audrain, Raccoon Creek, Goose Creek, Meramec 2, etc...) John

Subject: RE: Joppa OutputDate: Tue, 12 Dec 2006 09:33:52 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Joppa OutputThread-Index: AcceAAoo6fH+VcGGQWGvGxibZfcp2gAAWhlAFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>,"Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-12_04:2006-12-12,2006-12-10,2006-12-12 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612120012X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael

Please confirm that both of the model outputs with Joppa and without

Joppa that were sent this morning have the following:

1. The 14 model assumptions that we sent via email on Dec 4, 2006 to

you.

2. Final accounting prices for coal- Labadie $1.1335, Rush Island

1.5383, Meramec 1.2486, Sioux $1.5341 sent on Dec 6.

3. Final coal dispatch prices Labadie 1.2124, Rush $1.2561, Meramec

$1.4574 Sioux $1.6429 sent on Dec 6.

4. Nuclear price of .3438 for all 12 mos.

5. APL price of 20.10

6. Gas and oil accounting and dispatch prices being the same pepl

7.0716,ng 7.0435, mrt 6.8888, trunk 7.4450 oil 14.83 that was also sent

Dec 6.

John

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Tuesday, December 12, 2006 9:11 AM

To: Cassidy, John

Subject: Joppa Output

John:

Attached two files are from the Joppa (J) run.

Open these files with WordPad (not Word). WordPad in under Accessories.

When you open file JBrf.RTF (the brief summary report), you can just print it.

When you open file JElem.RTF (all of the monthly reports), you must first go to Page Setup (under File) and set the orientation to Landscape. And then you can print it.

I found a way to put page breaks in the Elem output file.

Michael

Subject: RE: Joppa OutputDate: Tue, 12 Dec 2006 10:37:11 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Joppa OutputThread-Index: AcceCCbpT6r8rNoTTjW+Je1Nz/CWFwAA3ypwFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>Cc: "Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-12_04:2006-12-12,2006-12-10,2006-12-12 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612120014X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael Callaway needs the 93.6 cent adder and the fixed cost of $1.6 mill added in to match Finnell's model.

From: Michael Rahrer [mailto:mrahrer@emelar.com] **Sent:** Tuesday, December 12, 2006 10:10 AM**To:** Cassidy, John**Subject:** RE: Joppa Output

Yes/ 1. The 14 model assumptions that we sent via email on Dec 4, 2006 to you.**NO. Sioux (assumption #9) is not running in a limited state. I have some results from a quick study I just sent to you.**Yes. 2. Final accounting prices for coal- Labadie $1.1335, Rush Island 1.5383, Meramec 1.2486, Sioux $1.5341 sent on Dec 6.Yes. 3. Final coal dispatch prices Labadie 1.2124, Rush $1.2561, Meramec$1.4574 Sioux $1.6429 sent on Dec 6.**NO**. 4. Nuclear price of .3438 for all 12 mos.I was using a value that changed monthly. I am now setting the DISPATCH price of Nuclear fuel to .3438I **had an adder of 0.1117 added to the accounting Nuclear price. Is that**

correct?Yes. 5. APL price of 20.10Yes. 6. Gas and oil accounting and dispatch prices being the same pepl 7.0716,ng 7.0435, mrt 6.8888, trunk 7.4450 oil 14.83 **I am using 14.8254Let me know about the Nuclear accounting cost and I will get these runs right back to you.**At 10:33 AM 12/12/2006, you wrote:

> Michael Please confirm that both of the model outputs with Joppa and withoutJoppa that were sent this morning have the following:1. The 14 model assumptions that we sent via email on Dec 4, 2006 toyou.2. Final accounting prices for coal- Labadie $1.1335, Rush Island1.5383, Meramec 1.2486, Sioux $1.5341 sent on Dec 6.3. Final coal dispatch prices Labadie 1.2124, Rush $1.2561, Meramec$1.4574 Sioux $1.6429 sent on Dec 6.4. Nuclear price of .3438 for all 12 mos.5. APL price of 20.106. Gas and oil accounting and dispatch prices being the same pepl7.0716,ng 7.0435, mrt 6.8888, trunk 7.4450 oil 14.83 that was also sentDec 6.John-----Original Message-----From: Michael Rahrer [mailto:mrahrer@emelar.com] Sent: Tuesday, December 12, 2006 9:11 AMTo: Cassidy, JohnSubject: Joppa OutputJohn:Attached two files are from the Joppa (J) run.Open these files with WordPad (not Word). WordPad in under Accessories.When you open file JBrf.RTF (the brief summary report), you can justprint it.When you open file JElem.RTF (all of the monthly reports), you mustfirst go to Page Setup (under File) and set the orientation toLandscape. And then you can print it.I found a way to put page breaks in the Elem output file.Michael

---

X-Symantec-TimeoutProtection: 0X-Symantec-TimeoutProtection: 1Subject: FW: FW: Case No. ER-2007-0002 - Data Request No. 0061Date: Tue, 12 Dec 2006 10:53:55 -0600X-MS-Has-Attach: yesX-MS-TNEF-Correlator: Thread-Topic: FW: Case No. ER-2007-0002 - Data Request No. 0061Thread-Index: AcbxHi1DWt8LM9C2SUCPRG3W69+wuwAFbUxgCzaIJNA=From: "Cassidy, John" <john.cassidy@psc.mo.gov>To: <Mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-12_04:2006-12-12,2006-12-10,2006-12-12 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612120014X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael - Here are the Callaway fuel cost for spent fuel and enrichment facilities.

From: Cassidy, John **Sent:** Monday, October 16, 2006 10:21 AM**To:** 'Michael Rahrer'**Subject:** RE: FW: Case No. ER-2007-0002 - Data Request No. 0061

Michael, Regarding your questions in the message below, I spoke to Tim and he said that he used a 9.984 Callaway heat rate for 2006 in his production cost model because 2005 would be distorted by the new steam turbines that were installed in October and November 2005. Basically Tim said that he used the 2006 heat rate that was shown on DR 61. Also regarding the "no fuel cost for Callaway in October

2005 ..." question from message below. Tim said that he used the 2006 fuel cost identified in DR 61 for Callaway. On your question about the heat rates for all of the other units Tim said those would be 2005 and they can be found on the schedule attached as TDF 3-1 to his July 2006 direct testimony. For reference he said you can also look at the UEBase.dat file which was included in response to DR 140. Regarding the planned outage dates for all of the units'- he said you can look at the UEscheduledmtc text file that was supplied with DR 140. That file can be opened with microsoftword or notepad. There you will find that Callaway was scheduled to go down 44 days starting on April 2, 2005. Tim also gave me 2 other items: 1. Updated hourly load data 2. A Callaway Fuel cost breakdown. Here he shows his cost of fuel and then the two components that were added after the model was run (93.6 cents adder for spent fuel and the fee paid for enrichment facilities of approx. $1.59 million. These are also attached above. I will call you this morning to go over this as well as the other questions that you had on Friday. Thanks --- John

From: Michael Rahrer [mailto:mrahrer@emelar.com] **Sent:** Monday, October 16, 2006 7:24 AM**To:** Cassidy, John**Subject:** Re: FW: Case No. ER-2007-0002 - Data Request No. 0061

John:Thanks for the updated Callaway information. I got a new 2005 heat rate (10.369) and new fuel costs from the spreadsheet.In the UnitData worksheet (MPSC 0140.XLS), it showed the Callaway heat rate at 9.984. According to the new worksheet, the 2006 Callaway heat rate is 9.984. So, I'm wondering whether the other unit heat rates in UnitData are for 2005 or 2006.Also, in the new spreadsheet, there is no fuel cost for Callaway in October 2005 because the unit didn't generate that month (in reality). However, we still need an October fuel cost because in the model, Callaway does run in October (the only planned outage is 04/02/05 through 05/16/05). Please verify with Tim the planned outage dates for all units that he used in the model.Thanks.MichaelAt 04:59 PM 10/13/2006, you wrote:

> Michael,Here is the updated response to data request 61 which identifies the three year average of gas and oil dispatch prices for all of the ct units by appropriate gas pipeline. Also attached is an update to Callaway fuel costs. See attached files. John

FBREPORT_PSC05_Jun12_nuc.xls

Sep 8 Load by Hour.xls

Subject: RE: New OutputDate: Tue, 12 Dec 2006 11:06:41 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: New OutputThread-Index: AcceD6nZ2/Ilc7AHSua/GQj9OvAlcAAACNYQFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-12_04:2006-12-12,2006-12-10,2006-12-12 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612120015X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael -- What is the coal burn in tons associated with the with Joppa

Run? Would it change from what you sent me earlier?

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Tuesday, December 12, 2006 11:03 AM

To: Cassidy, John

Subject: New Output

John:

Here is the output with Joppa and without Joppa.

File starting with J is with Joppa, NJ = no joppa.

Files containing BRF are the brief summary reports

Files containing ELEM are the element reports.

Print the same way as before. Page breaks are included.

Michael

Fuel run for interchange sales coming up in a few minutes.

Subject: FW: Staff OutputDate: Tue, 12 Dec 2006 11:30:26 -0600X-MS-Has-Attach: yesX-MS-TNEF-Correlator: Thread-Topic: Staff OutputThread-Index: AccdtkPWNHpfVYBBTC2psHltP9wSkQAXKiOQFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-12_04:2006-12-12,2006-12-10,2006-12-12 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612120015X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael in the attached email above you provided fuel tons. With the

changes you made to callaway prices, would the coal fuel tons change in

the file above? If yes, please send me the coal fuel tons burned by the

model like this excel spreadsheet shows. John

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Tuesday, December 12, 2006 12:23 AM

To: Cassidy, John; Meyer, Greg

Subject: Staff Output

John/Greg:

Attached spreadsheet file contains some output from the Staff data RealTime runs.

The worksheet FuelTons contains the coal tons consumed in both the Joppa (EEI) run and the no Joppa run.

The total system cost for the Joppa run was $22,848,700. The total system cost for the no Joppa run was $167,390,380.

The worksheet SaleChanges shows the generation difference between a Joppa run with sales and a Joppa run without sales. The spreadsheet values can be construed to show the units that made the sales. As you can see, the no sales run overgenerated by 471,843 mWhs. Over generation usually happens because all units at their minimum capacities (the coal units anyway) is greater than the demand for the hour. The total system cost of the run with Joppa but without sales was $403,115,770.

I can send you whatever reports you need in the morning.

Michael

Staff_FuelTons.xls

ATT1882584.txt

Subject: Qn on nuclear dispatch costs..Date: Thu, 14 Dec 2006 08:21:06 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Qn on nuclear dispatch costs..Thread-Index: AccfixfDMdgnxtSvRK+ANnCB4McYow==From: "Cassidy, John" <john.cassidy@psc.mo.gov>To: <mrahrer@emelar.com>Cc: "Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-14_02:2006-12-13,2006-12-13,2006-12-14 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612140014X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael - What is your nuclear dispatch cost? What is Company's nuclear dispatch cost? Is there a difference in the nuclear accounting and dispatch cost? -John

---

Subject: RE: Keeper of the FilesDate: Thu, 14 Dec 2006 18:06:47 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Keeper of the FilesThread-Index: AccfGwIm8wQIV6hrQPaIMwXWdcex4AAv3ImQFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>Cc: "Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-15_01:2006-12-14,2006-12-13,2006-12-14 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612140043X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael,

Not sure what the monthly production model included in the zip file

represents. The model we annualized to was the With Joppa with Sales

run.

I thought we would provide the following scenarios (monthly and

summaries):

1. with joppa with sales (ie. Fuel & pp exp. Of $624,454,340)

2. with joppa without sales

We can add these to all the benchmark related files.

Also, I believe your schedule 1 also changed.

We can talk in the morning. These files will need to be submitted by

noon tomorrow. So we need to complete this task early tomorrow.

Thanks -- John

Subject: RE: FW: Fuel TonsDate: Fri, 15 Dec 2006 12:37:21 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: FW: Fuel TonsThread-Index: Accgcb/SYNv/3epoRPWO9BQD/R+E7gABV20gFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-15_05:2006-12-15,2006-12-15,2006-12-15 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612150029X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael, I will also provide a copy of the file related to the fuel tons
for Joppa+sales run to AmerenUE. Thanks for the quick follow up. Have
a great weekend! John

PS - I will forward the files we are giving to Ameren in an email in a
few minutes.

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Friday, December 15, 2006 11:50 AM
To: Cassidy, John
Subject: Re: FW: Fuel Tons

Attached file is fuel tons only for the Joppa + Sales run.

At 12:02 PM 12/15/2006, you wrote:
>
>
>Michael I will talk to Leon about Schedule 1 and 4. Can you send me a
>file that shows fuel tons for the Joppa with sales run (without any of
>the other iterations)? John
>
>-----Original Message-----
>From: Michael Rahrer [mailto:mrahrer@emelar.com]
>Sent: Tuesday, December 12, 2006 11:35 AM
>To: Cassidy, John; Meyer, Greg
>Subject: Fuel Tons
>
>John/Greg:
>
>Attached spreadsheet file has three sections showing coal tons.
>With Joppa & with Sales
>With Joppa & without sales

>Without Joppa & With sales

>What next?

>Michael

==

Subject: RE: Work PapersDate: Tue, 19 Dec 2006 08:49:13 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Work PapersThread-Index: Accjdc1mUhLRQooxQGKX7zp1xS6w1wAAeuQgFrom: "Bender, Leon" <leon.bender@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>Cc: "Mantle, Lena" <lena.mantle@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-19_02:2006-12-19,2006-12-18,2006-12-19 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612190020X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <leon.bender@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

I'll send this to even though we just talked on the phone. I've just

talked to Lena. Workpapers are papers that you have created in doing

this work, inputs and results of the model, comparisons, spreadsheets,

etc. It does not include papers they supplied to you. You do not have

to create a work paper just because they think it should exist. You do

not have to supply them with something they have asked for if you didn't

create it nor do extra work just because they think you should have(such

as results from an hourly run if you didn't do an hourly run. If you

have already supplied what is asked for then say so. If you did not

create what they are asking for then just say that too.

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Tuesday, December 19, 2006 7:57 AM

To: Bender, Leon

Subject: Work Papers

Leon:

Just starting to look over the work paper comments. I will respond to each one and send those responses to you. Are you in today?

Michael

Subject: RE: Fuel PricesDate: Wed, 20 Dec 2006 11:46:09 -0600X-MS-Has-Attach: yesX-MS-TNEF-Correlator: Thread-Topic: Fuel PricesThread-Index: AcckWRI58u2c+2PGQF+94mKoWhkGPwAAVi4gFrom: "Cassidy, John" <john.cassidy@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2006-12-20_04:2006-12-20,2006-12-19,2006-12-20 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0612200042X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael:

Below are the coal dispatch prices developed by Mike Proctor for your

records:

Coal Units cents per MMBTU

Labadie 121.24 PRB ILL

Sioux 164.29 131.99 323.87

Rush Island 125.61

Meramec 145.74

Average 139.22

The accounting coal dispatch prices are summarized in the attached excel

file. UE plans to burn roughly 620,000 tons of Illinois coal at Sioux.

Approx. 420,000 tons are under contract and the 26.85 price at the mine

is final. The transportation price related to this 420,000 tons may

increase somewhat. I used these prices as a surrogate price for the

remaining 200,000 tons that they plan to burn, because the 200,000 tons

contract terms are not final (subject to a test burn to be completed

this week). I also used the transportation terms as a surrogate as

well. The $26.85 is based on the terms of the existing ILL coal

contract.

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Wednesday, December 20, 2006 11:04 AM

To: Cassidy, John

Subject: Fuel Prices

John:

You sent me some PRB and ILL coal costs (PRB = 152.76 cents/mmbtu, ILL = 156.81 cents/mmbtu) once, but I don't know whether those were dispatch or accounting costs. Those numbers are so close that the difference in a ton of it is less than a dollar. Does that seem right?

Can you give me both costs for both fuels so I can check out some issues with the Sioux plant?

Is the higher SO2 content of the ILL coal included in the cost of the coal?

Michael

HIGHLY CONFIDENTIAL FINAL COAL COST DIRECT FILING Electric Schedule 2.xls

---

Subject: RE: New RunsDate: Wed, 3 Jan 2007 05:30:14 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: New RunsThread-Index: AccvKjfcMMvTpC/aRaeQYaJnxuc7OgAABh2AFrom: "Meyer, Greg" <greg.meyer@psc.mo.gov>To: "Michael Rahrer" <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2007-01-03_01:2006-12-29,2006-12-29,2007-01-03 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0701030004X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <greg.meyer@psc.mo.gov>X-SF-HELO-Domain: MOMAIL1.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Thanks Michael for getting these done quickly. I'm sure there will be ,ore runs. Let me know your travel plans and I will see if we can get together before the dep.

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

From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Wednesday, January 03, 2007 5:26 AM

To: Cassidy, John; Meyer, Greg

Subject: New Runs

John/Greg:

Attached two files are the "reduced cost" runs.

JRC_BRF = Joppa, Reduced Cost

NJRC_BRF = No Joppa, Reduced Cost

I reduced the fuel accounting cost as well as the fuel dispatch cost. I

also reduce the purchased power cost for the economy contract, not the

APL contracts (price is still $20.10/mwh).

Took at quick look at them and they appeared reasonable.

Michael

Subject: MichaelDate: Fri, 5 Jan 2007 11:31:18 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: MichaelThread-Index: Accw705j/o/yZKtKS0CM7IKpC4NzHQ==From: "Cassidy, John" <john.cassidy@psc.mo.gov>To: <mrahrer@emelar.com>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2007-01-05_03:2007-01-03,2006-12-29,2007-01-05 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0701050023X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael,

Can you send me a full run with all the months (with energy, with fuel costs etc...) that is based on our direct testimony case assumptions that shows:No Joppa, With Sales

No Joppa, Without Sales

I know we had these runs at one point, but then we made the changes to the runs to fix net system input on Dec 11/Dec 12. I'm not sure if I have these runs after we made the corrections to change the net system input. (I thought net system input was the last change we made to our base case filing for With Joppa, With Sales.)

You may already have these files somewhere. If so please forward to me thanks. Mike Proctor needs to see these runs.

Thanks -- John

Subject: Two more scenarios needed in addition to below...Date: Fri, 5 Jan 2007 12:48:38 -0600X-MS-Has-Attach: X-MS-TNEF-Correlator: Thread-Topic: Two more scenarios needed in addition to below...Thread-Index: Accw705j/o/yZKtKS0CM7IKpC4NzHQACMUcgFrom: "Cassidy, John"

<john.cassidy@psc.mo.gov>To: <mrahrer@emelar.com>Cc: "Proctor, Mike" <mike.proctor@psc.mo.gov>,"Meyer, Greg" <greg.meyer@psc.mo.gov>X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5446:2.3.11,1.2.37,4.0.164 definitions=2007-01-05_03:2007-01-03,2006-12-29,2007-01-05 signatures=0X-Proofpoint-Spam-Details: rule=notspam policy=default score=0 classifier= adjust=0 reason=safe engine=3.1.0-0612050001 definitions=main-0701050030X-Server: LogSat Software SMTP Server - Unlicensed Evaluation CopyX-SF-RX-Return-Path: <john.cassidy@psc.mo.gov>X-SF-HELO-Domain: MOMAIL2.mo.govX-SF-WhiteListedReason: Whitelisted EMail Address To

Michael:

Mike Proctor needs a fuel run for:

1. With Joppa Without Sales with the same assumptions as before (off peak +22.9% and -22.9%; on peak +26.7% and -26.7%, coal +29.7% and -29.7%, gas +22.5% and -22.5%)

2. Without Joppa Without Sales with the same assumption above.

3. Also please forward a copy of the runs described below. (i.e.. No Joppa, with Sales and No Joppa, Without Sales - both based on same assumptions as our direct testimony filed run). See below...

Please send all of this to Greg Meyer, Mike Proctor and myself. Thanks - John

---

From: Cassidy, John **Sent:** Friday, January 05, 2007 11:31 AM **To:** 'mrahrer@emelar.com' **Subject:** Michael

Michael,

Can you send me a full run with all the months (with energy, with fuel costs etc...) that is based on our direct testimony case assumptions that shows:No Joppa, With Sales

No Joppa, Without Sales

I know we had these runs at one point, but then we made the changes to the runs to fix net system input on Dec 11/Dec 12. I'm not sure if I have these runs after we made the corrections to change the net system input. (I thought net system input was the last change we made to our base case filing for With Joppa, With Sales.)

You may already have these files somewhere. If so please forward to me thanks. Mike Proctor needs to see these runs.

Thanks -- John

To: Leon Bender

Subject: Ameren

Leon:In Finnell's direct testimony about calibrating the model, he provided attachment TDF-1-1. He also stated the generating output from the AmerenUE system would be 45,189,773 mwhs. (probably including sales)Attachment TDF-1-1 shows Jan to Nov 2005 generation, actual vs calibration (I assume the calibration values are from his model run). Anyway, Callaway actual generation was 7,120,725mwhs and the calibrated generation was 6,939,500mwhs. But, in the model output data they sent (MPSC DR 0140.XLS, worksheet Output.Data), they show Callaway generation at 8,005,400mwhs for the Jan to Nov period.What I would like to get from Ameren are the actual three things listed below.1. **hourly load** (he says in line 4, page 4 of his direct testimony that major inputs to the model include normalized hourly load. I know the commission will eventually be providing their own version of hourly load, but I want to get Ameren's load. We don't really need the total generation figure, we need the total load that they had to serve. The load file they gave us totaled to 40,063,875mwhs. That value is close to the 45,189,773 value if you subtract their sales (8,359,017) and multiply by 12/11 to make up for the missing month of December. That calculation would put domestic load at 40,179,006, but I don't know if that is what they've done.)2. **real model output, including costs.** (They provide very little model output cost information and the information they do provide, I can't figure out. For example, Callaway cost for 2005 is shown at $40,402,000. The absolute fuel cost for Callaway using their data is $30,132,151. And if you add the variable O&M costs ($3.08/mwh), that cost is $27,339,928. So, how did they come up with the $40,402,000 figure? Maybe these are revenue figures, but the point is, the cost information provided is unclear.)3. **actual unit generation.**As I've already mentioned, he is calibrating his model based on plant generation, not cost. Any model will meet load with the available units generating whatever is needed, that's basic. His individual plant generation is off from anywhere from .4% (lowest) to 2.5% (highest), but his total generation is only off by .5%. That is only proof that his model is doing the basic job of meeting load with generating assets. That being said, we need to have RealTime use their data to calibrate our model against their data. Then, we can work with our data to evaluate their petition.Michael

---

To: Leon Bender

Subject: Ameren Load

Leon:

Was just re-reading the supplemental direct testimony and they mention (page 2, line 1) the amount of load that they gave us in the hourly load file (40,063,446). This is still about 400mwhs less than the file value. But that is tiny. However, they now say the real load should go down by 190,530 mwh to 39,872,916. That's the load file I need from them.Michael

---

John:

Thanks for the updated Callaway information. I got a new 2005 heat rate (10.369) and new fuel costs from the spreadsheet.

In the UnitData worksheet (MPSC 0140.XLS), it showed the Callaway heat rate at 9.984. According to the new worksheet, the 2006 Callaway heat rate is 9.984. So, I'm wondering whether the other unit heat rates in UnitData are for 2005 or 2006.

Also, in the new spreadsheet, there is no fuel cost for Callaway in October 2005 because the unit didn't generate that month (in reality). However, we still need an October fuel cost because in the model, the only planned outage is 04/02/05 through 05/16/05. Please verify with Tim the planned outage dates for all units that he used in the model.

Thanks.

Michael

PS: Using the new Callaway heat rate
in the
The new heat rate explains the total Callaway cost in 2005 of about $40,000,000. The old heat rate was 9.984.

At 04:59 PM 10/13/2006, you wrote:

Michael,

Here is the updated response to data request 61 which identifies the three year average of gas and oil dispatch prices for all of the ct units by appropriate gas pipeline. Also attached is an update to Callaway fuel costs. See attached files.

John

Thanks.

At 12:45 PM 10/16/2006, you wrote:

Michael,

I just spoke to Tim and he said that Labadie Unit 1 was input into the model for an outage on 9/17/05. He said that the "uesched.mtc" file is correct file for the inputs into Prosym.

John

John:

I forgot one thing yesterday. I still need his new model output showing as much detail as possible (by unit if possible, but by plant is ok just for today). The FBREPORT_PSC05_Jun12_nuc.xls file you sent yesterday is the run where the hourly load totaled 40,064,000 mwhs.

The new annual load is 39,872,731 (sent yesterday).

Thanks.

Michael

At 12:45 PM 10/16/2006, you wrote:

Michael,

I just spoke to Tim and he said that Labadie Unit 1 was input into the model for an outage on 9/17/05. He said that the "uesched.mtc" file is correct file for the inputs into Prosym.

John

John:

Thanks.

In his assumptions worksheet, he says this about the sales:

Sales Volumes 5x16 1500 Mws plus 500 at 50% outage rate
2x16 1500 Mws plus 500 at 50% outage rate
7x8 1000 Mws plus 500 at 50% outage rate

In one of the files you sent yesterday, the sales assumptions were changed (I think) to 2000 mw (on peak) with an additional 500 mw of potential sales that are available 50% of the time. For a possible total sales capacity on peak of 2500. The values are 1500 and 500 for off-peak hours.

Unless I hear from you otherwise, I'm going to assume that the assumptions were not updated in the Sep8 file I just received.

Michael

At 09:46 AM 10/17/2006, you wrote:

Michael,

Attached is the fuel budget report updated for the new annual load of 39,872,731. Please let me know if I can help with anything else.

John

\brdrth
From: Finnell, Timothy D [mailto:TFinnell@ameren.com]
Sent: Tue 10/17/2006 8:38 AM
To: Cassidy, John
Subject: TDF Supplemental Fuel Budget Report

John:

The benchmark runs are going pretty well, but I have a possible problem with the Meramec units. My average cost is $15.29/mwh) and Ameren's value is $15.59/mwh.

Could you confirm the Meramec fuel model costs with Tim. (In one file you pointed me to, it says for Mer.Avg.COAL, [2005] [M1] 134.3 with a growth rate of .02. And I think you or someone mentioned that Ameren was using 2006 or 2007 fuel prices?)

I have an accounting cost of $1.343/mmbtu (constant for all year) and dispatch costs (in $/mmbtu) of

Jan	1.109
Feb	1.123
Mar	1.193
Apr	1.157
May	1.185
Jun	1.188
Jul	1.183

Aug	1.127
Sep	1.154
Oct	1.158
Nov	1.174
Dec	1.194

Thanks.

Michael

John:

Thanks. Did he say whether he ever ran a Meramec unit on gas?

I am also getting more purchases than the Ameren run. Could you verify that the APL fixed purchase contract is still in effect (160mw every hour of the year at $12.51/mwh)?

And that the exchange rate ($/mwh) used for the economy purchase contract is from spreadsheet file Finnell - fpc030405Jun12.xls, the 030405avg worksheet and the last column of numbers (in light blue)? The Jan 1 hour 1 value is 15.29.

Also, are these the same values used for the sales contracts?

On another subject (Callaway), I have a couple of questions. You sent a new spreadsheet file a few days ago named mpsc 0061 supp1 callaway fuel 06 to 10.

That file shows generation from 2004 through 2010. None of the annual generation values match his model output (8,877,000). I forget what this spreadsheet was supposed to show. Is there any information here that relates to the model? In our model, Callaway is generating around 9,122,000 mwhs.

Michael

PS: I do want to formally ask for model output by unit and realize that is a new DR. Yesterday Greg said I should go through you if I want new information. What specifically do i need to do?

At 04:59 PM 10/19/2006, you wrote:
Michael,

I just spoke with Tim. He said that both the dispatch costs (Jan $1.109/mmbtu, Feb $1.123/mmbtu etc...) and the accounting cost ($1.343/mmbtu)that you identified were used in his Prosym model. He said the accounting cost is really a 1/1/07 cost and that the growth rate of .02 was not used or applied in any way in his Prosym runs for the rate case. He said he just leaves that growth rate in there for times when someone asks him to run the model for future years.

John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Thursday, October 19, 2006 2:09 PM
To: Cassidy, John
Subject: Meramec Gas

John:

You may be right about running the units on gas. Ameren's gas usage for Meramec was 429 billion btus, just for starts, my gas usage was 29 billion btus.

Michael

Leon:

Attached is a spreadsheet file with two worksheets (generation and cost). It contains generation and cost from the RealTime database and the Ameren run (output can be found in FBREPORT_PSC05_Sep8.xls).

The RealTime run contained 20 iterations and the final computed sampling error was 2%. I will try a 30 iteration run to try to reduce the sampling error to 1%.

The RealTime generation is right on the actual load of 39,872,731 (off by14mwhs). The Ameren generation is probably right on also, but they rounded so that I can't actually tell.

The RealTime cost is .03% higher than the Ameren cost. I'm pretty happy with these results.

There are some notable generation differences.

1. RealTime purchased more and generated less from the "non-major" units. The increased purchases (155,961mwhs) was just about the reduction in non-major unit generation (-142,142). RealTime frequently found it cheaper to purchase power than to start up the other units.

2. RealTime generated 387,447 less mwhs from Callaway than did Ameren.

3. Other unit generation differences are probably due to differences in outage rates.

I am going to see if I can get RealTime to generate more from Callaway, but that should reduce RealTime's cost and make the gap between RealTime's cost and Ameren's cost a little larger.

I will be out of the office much of tomorrow but hope to have the final benchmark run finished by Monday.

Please distribute this email to whomever would like to see it. Thanks.

Michael

John:

Thanks for the info. Let me think about the DR this weekend. If the commission wants to work at the plant level that might be better for them, so let me check with Leon and the others.

Michael

At 09:32 AM 10/20/2006, you wrote:
Michael

On the Meramec units running on gas question: Tim pointed me to the uebase.dat file which showed that all four Meramec units always burn some level of gas while running. He pointed me to a fuel ratio input for each one of those units. That ratio is 99.36% coal and .64% gas.

Regarding the APL fixed purchase contract: Tim said that they used 160mw every hour of the year at $12.51which was the 3 year avg of market price(jan 03-dec 05) "to be consistent with off system purchases and sales." I will forwarding a copy of the actual APL (now Entergy) contract in an email later this morning. We may need to follow up on this.

Regarding exchange rates - he said the economy purchase contract is from the spreadsheet file Finnell fpc030405Jun12.xls, the 030405avg worksheet and the last column of numbers (in light blue) and yes the Jan 1 hour one value is 15.29. Also, the same vales are used for the sales contracts.

The mpsc0061 suppl callaway fuel 06 to 10 file is supposed to show the 2006 fuel costs that were used. He used the 2006 fuel cost $/mmbtu for pricing (ie. the $.344 /mmbtu)

How do you want me to word the data request? How about this?

"Regarding the September 2006 updated Prosym production cost model filed by the Company, please provide all model output on a by unit basis."

Please edit the request above if you would like to word it differently. I want to make sure we obtain the exact information that you need. Once I hear from you I will submit the request (or any other requests that you might have) to Company.

Thanks -- John

\brdrth
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Thu 10/19/2006 4:42 PM
To: Cassidy, John
Subject: RE: Meramec Gas

John:

Thanks. Did he say whether he ever ran a Meramec unit on gas?

I am also getting more purchases than the Ameren run. Could you verify that the APL fixed purchase contract is still in effect (160mw every hour of the year at $12.51/mwh)?
And that the exchange rate ($/mwh) used for the economy purchase contract is from spreadsheet file Finnell - fpc030405Jun12.xls, the 030405avg worksheet and the last column of numbers (in light blue)? The Jan 1 hour 1 value is 15.29.

Also, are these the same values used for the sales contracts?

On another subject (Callaway), I have a couple of questions. You sent a new spreadsheet file a few days ago named mpsc 0061 supp1 callaway fuel 06 to 10.

That file shows generation from 2004 through 2010. None of the annual generation values match his model output (8,877,000). I forget what this spreadsheet was supposed to show. Is there any information here that relates to the model? In our model, Callaway is generating around 9,122,000 mwhs.

Michael

PS: I do want to formally ask for model output by unit and realize that is a new DR. Yesterday Greg said I should go through you if I want new information. What specifically do i need to do?

At 04:59 PM 10/19/2006, you wrote:
>Michael,

>
>I just spoke with Tim. He said that both the dispatch costs (Jan
>$1.109/mmbtu, Feb $1.123/mmbtu etc...) and the accounting cost
>($1.343/mmbtu)that you identified were used in his Prosym model. He
>said the accounting cost is really a 1/1/07 cost and that the growth
>rate of .02 was not used or applied in any way in his Prosym runs for
>the rate case. He said he just leaves that growth rate in there for
>times when someone asks him to run the model for future years.
>
>John
>
>-----Original Message-----
>From: Michael Rahrer [mailto:mrahrer@emelar.com]
>Sent: Thursday, October 19, 2006 2:09 PM
>To: Cassidy, John
>Subject: Meramec Gas
>
>John:
>
>You may be right about running the units on gas. Ameren's gas usage for
>Meramec was 429 billion btus, just for starts, my gas usage was 29
>billion btus.
>
>Michael

John:

Hate to bother you on a Friday afternoon, but could you ask Tim to interpret the CapacityMax vector for Sioux 1 in uebase.dat.

I was guessing in January ([m1]), the max cap is 428 until 5am and then 500 the rest of the day. Then in March ([m3]) it changes to a max cap of 456 after 5am.

But, guessing is not knowing. Also, it is important to know whether this a model constraint or the way the units are actually run.

A quick explanation for the Rush.2 CapacityMax data would also be helpful.

Michael

John:

In all of the Ameren models, Callaway generates 8,877,000 in 2005.

Based on the monthly deratings for Callaway (shown in uebase.dat), if the unit generates 100% of the time (with no outages at all) it can generate exactly that amount (8,878,488).

So, question is does Ameren assume no forced outages for this unit?

Michael

Leon:

What I meant by asking you how to proceed is whether I should force the model to buy less and sell less (right now major unit generation by plant is within .004% of their model, so that is pretty good). However, the model is buying more and selling more than their model. I actually think both decisions are sound, but it results in RealTime's total cost being about 6,700,000 less than their model.

Attached is the most recent benchmark results. I still have some outstanding questions with John and their may be a few other cost considerations.

Michael

John:

Thanks. One more thing, it's not clear yet whether the plant operators actually operate in this manner (i.e., reducing a unit's max capacity for some hours every day) or whether Tim just models it that way.

I don't really need the answer for the benchmark run, but will need to know when the Commission starts making their own runs and assumptions.

Attached is the most recent benchmark run/comparison. As you can see we're right on the nose for generation from the major units, but we are still high on purchases and sales and that knocks RealTime's cost down. I think the sales are realistic actually (there are only 209 hours in the entire year when load exceeds the generation capacity of the best units (Callaway, Lab, Sioux, Mer, RI), so given the ability to sell 1500 off peak and 2000 on peak (plus an extra 500/hour with a 50% outage) rate) should add up to a lot of sales.

I'm asking Leon whether I should modify the model to artificially (i.e., change the assumptions) reduce sales and purchases to get closer to the Ameren model.

Michael

At 09:18 AM 10/23/2006, you wrote:
Michael,

I visited with Tim early this morning. Here is a summary of his explanation on Sioux 1, Rush Island 2 regarding the capacity max vector in the uebase.dat file:
He said that Sioux 1 runs at 428 from midnight to 5am year round. From March through June and September through December it runs at 456 from 5am to midnight. For July and August and January and February, it runs at 500 from 5 am until midnight. He said this had to do with the assumptions they made with how they blend the coal at Sioux.

He said Rush Island 2 is knocked down to 290 from 2am to 6am every Tuesday. It is reduced to 380 from 2am to 6am every Thursday. It is reduced to 290 from 2am to 6am every Saturday. He said this had to do with slagging that typically occurs with that unit.

With regard to your question about whether or not Ameren assumes any forced outages for the Callaway:

Tim said Ameren did not model any full forced outages for Callaway. Instead of a full forced outage Ameren assumes an equivalent forced outage rate for Callaway for every hour of the year. The EFOR is 5.5%. Basically the Callaway capability is "derated" by 5.5% for every hour of the year based on Tim's assumption. For example Callaway's capability is 1190 in July, but Ameren has modeled Callaway on a 1125 capability for that month after the 5.5% EFOR is applied.

Let me know if you need anything further.

Thanks - John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Sunday, October 22, 2006 11:09 PM
To: Bender, Leon
Cc: Cassidy, John
Subject: Ameren

Leon:

I will be traveling to Denver tomorrow around noon. I have my laptop and cell phone and will continue to work on Ameren while in Denver. I return to my office on Oct 29.

How do you want to wrap up the benchmarking of Ameren? I've already sent you a spreadsheet where our costs were virtually identical with Ameren's, but the generation was off (on a plant basis). I now have the generation pretty closely matching Amerens, but RealTime cost is about 2% less.

I have some questions outstanding with John Cassidy and hope to get those answers on Monday. There are some issues (like sales), where I think Ameren's numbers are too low. But I need some guidance on how to proceed. For example, do I need to match purchases and sales with Ameren, or just unit generation?

Michael

My cell phone number is 561-809-6337. After 11am tomorrow, I will be unavailable for the rest of the day, but please feel free to email me.

Greg, et al.

Just to confirm, you are asking me to change the "forward price curve" used for purchases and sales by 13.35% on peak and 11.28% for off peak. I'm assuming you also want to continue with no constraints on sales and purchases.

That's pretty easy to do and if you confirm this, I'll have it done by midday.

You already mentioned my main concern, we will be increasing the price curve without increasing the fuel prices. So, my initial guess is that we will purchase less and sell more.

Michael

At 02:07 PM 10/27/2006, Meyer, Greg wrote:

Yes Michael would you please do this analysis and get us back the results. Thanks

From: Proctor, Mike
Sent: Friday, October 27, 2006 12:00 PM
To: Proctor, Mike; Meyer, Greg; Cassidy, John
Cc: 'Michael Rahrer'
Subject: Update on Wholesale Market Prices

UE responding to our data request to provide data on MISO prices for UE. That data included 2006 for January through September. I have compared that data to the normalized prices the UE has used in its run (recall this is a three year average based on adjusting for high gas prices related to hurricanes and high off-peak prices related to rail problems for coal shippments). I believe that most of these effects are no longer in the data starting in January 2006. The results of this comparison are shown below:

<< OLE Object: Microsoft Office Excel Worksheet >>

Notice that for the months of October through December, there is no data from UE and so I applied the non-Summer % increase for January through May to these three months of UE's normalized data to arrive at adjused leves for those months. I then averaged over all 12 months to get an annual % increase for 2006 actuals compared to UE's normal prices. Note: these are average monthly on-peak and off-peak prices calculated from both actual and normal data. Applying the percent increases to each hour's normal data should produce the same annual average as shown in the Adjusted AVG row above.

I have three concerns with using the above approach:
1) Notice the significant percentage increase for August - which we know was an abnormally hot period;
2) I am unsure as to whether the remaining months in 2006 were normal with respect to weather (e.g., the high percent increase in May); and

3) I want to be sure that natural gas prices had dropped by January of 2006 - this needs to be clarified (notice the high percent increase in Jan).

All three of these concerns need to be followed up with weather data and natural gas price data.

For purposes of illustration, I reran the analysis, excluding Jan, May and Aug (the "suspect" months) to see what the differences would be. These results are shown below:

Removing the "suspect" months does decrease the percentage difference. Until we can confirm the concerns listed above, I recommend that Michael apply the 13.35% increase to on-peak UE normalized prices and 11.28% increase to off-peak UE normalized prices as a sensitivity to see by how much sales will increase and purchases will fall. Let me know what you think.

Thanks,
Mike

Greg:

Upon further reflection, I think I did it correctly the first time. I'll have something for you in the morning.

Michael

At 05:19 PM 10/30/2006, you wrote:
Thanks Michael for the work. One Question- With this run can you tell me what the profit/margin from Interchange sales are.

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Monday, October 30, 2006 2:45 PM
To: Meyer, Greg
Subject: RealTime with Increased Price Curve

Greg:

Attached files show the results of increasing the purchase/sales price curve. The XLS file is the standard comparison that I've been sending. The Txt file is the Brief Report from the model. I will start tagging runs with their run time (in this case 14:20:37). That time is stamped on all model output.

In a nutshell, we purchased a little less (83,000mwhs) and sold about a million mwhs more. Excess sales came mostly by increase the "other" units.

Michael

John:

First question, is the Joppa unit called EEI? (I think of Edison Electric Institute).

Where We Are Now

1. We have made and delivered a benchmark run.

2. We also made a run where we lifted all capacity constraints from the sales and purchase contracts.

Where To Go

1. Bench Mark Run. Do you want to modify the benchmark run to correct the Callaway monthly capacities based on Tim's corrected values? If not, how do you want to use Tim's corrected data?

2. What kind of run is next? As we start the next phase, do we start a new database with the benchmark restrictions on sales and purchases in place? Or remove the restrictions?

3. Callaway capacity. Currently, we are using Tim's monthly capacity reductions and **NO** forced outages for Callaway. There is one planned outage of 43 days starting on April 2, 2005. Do you want to add another planned outage for 23.345 days (23 days, 8 hours) starting sometime in November? Do you want to remove the monthly capacity restrictions and run the unit at full capacity except during the two planned outages?

4. At what point do we add the Joppa unit? {I don't have enough information on this unit. Looks like UE's share of capacity is 400mw. What is its coal price? Any variable O&M cost? Any forced outage rates? Any start up costs and times.

5. Looks like you want to change the fuel prices and the sales/purchase market prices. We just need a plan of when to add each new item. All at once, or piecemeal.

Michael

---

ohn:

I've misplaced Greg's email address could you get him a copy of this email and the one from yesterday.

About Joppa. I was going to parcel out the total generation (3,314,800mwh) to the peak hours of the year. However, that much generation won't fit. There are 16 peak hours a day, 365 days in the year, so 5,840 peak hours. At a max capacity of 405mw from Joppa, only 2,365,200mwhs could be generated on peak hours.

The total Joppa hourly take for the whole year would be 378mw (3,314,800mwh / 8,760 hours).

What I'm trying to say is that there will be some input from Joppa every hour of the year. But, I will earmark 405mw in every peak hour and slightly less in the off-peak hours.

Michael

Greg:

About sales again. RealTime can make a sale "at cost", meaning no profit. Or RealTime can be set to sell power at a market price curve amount, meaning that it will make a profit.

In either case, RealTime will not sell power unless it can generate the power at or below the market curve price. So, no matter what setting is used, RealTime sells the same amount of power.

Question. So far, in the benchmark run, RealTime did not make a profit on sales. (I did that because I didn't know how Tim had made his run.) Do you want me to set the option to "make a profit", i.e., sell at the market price curve amount. Or set it to sell power at the cost of generation?

I'll be out of the office for an hour. The joppa run is going on now.

Michael

Greg/John:

We need a decision about sales prices. The question is essentially, when we make a sale does the sale take place at the market curve price (aka forward price curve)?

For example, on January 7, the market curve price at 1am is $20.35. If RealTime purchases power in this hour, it will pay $20.35/mwh.

If RealTime sells power in this hour, does it charge $20.35 for the power sold? I think we should ask Tim how he modeled sales prices.
Michael

==

I told you earlier that the model was currently set to sell power at its cost of generation. So, taking the example above, if it could generate power at $15.35/mwh at 1am on Jan 7, it would sell that power at $15.35. Essentially making no profit.

But I was wrong in telling you the model was selling power at cost because I forgot that we were excluding variable O&M from the final model expenses. The model was making some profit based on the fact that it was selling power at it's cost (including O&M expenses) but in the final expense was not including variable O&M. Oops. Based on what you decide, I'll have to redo the original benchmark, but it should be fast this time.

Yes it helps, thanks. We will sell power at the forward market price. Finding out whether variable O&M is included in Tim's Ameren runs is also important. I don't believe he is including it.

At 12:00 PM 11/27/2006, you wrote:
Michael, We want to use the forward market price curve. We are
currently wrapping up our reviews and should be able to get you final
market prices soon. John C. is checking on the inclusion or exclusion
of variable O & M for the model. Right now we are going to do what the
Company did in this area. I hope this helps. I or John will be back
with you later today on anything we have. Thanks

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Monday, November 27, 2006 8:28 AM
To: Meyer, Greg; Cassidy, John
Subject: RealTime Sales

Greg/John:

We need a decision about sales prices. The question is essentially, when we make a sale does the sale take place at the market curve price (aka forward price curve)?

For example, on January 7, the market curve price at 1am is $20.35. If RealTime purchases power in this hour, it will pay $20.35/mwh.

If RealTime sells power in this hour, does it charge $20.35 for the power sold? I think we should ask Tim how he modeled sales prices.

Michael

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John:

Not really. But I can estimate the number by making a run without any interchange sales. That number won't be perfect, because sales actually help the system (keeps units from being shut down, takes excessive generation from must run units, etc) but might give you a ball park number.

Would you like to see it?

Michael

At 08:31 AM 11/28/2006, you wrote:

Also are you able to breakdown coal burn by tons for baseload and interchange sales?

John

No problem. I'll have it for you shortly. I'm re-running the earlier benchmarks and other runs. Generation amounts are not affected, but cost is because we are now selling power at the forward price market curve.

At 09:00 AM 11/28/2006, you wrote:
How about just tons of coal burn ignoring a baseload and interchange sales breakdown?

\brdrth
From: Michael Rahrer [mailto:mrahrer@emelar.com]

Sent: Tue 11/28/2006 7:41 AM
To: Cassidy, John
Subject: Re: How many tons of coal burn were modeled in our most recent run?

John:

Not really. But I can estimate the number by making a run without any interchange sales. That number won't be perfect, because sales actually help the system (keeps units from being shut down, takes excessive generation from must run units, etc) but might give you a ball park number.

Would you like to see it?

Michael

At 08:31 AM 11/28/2006, you wrote:

Also are you able to breakdown coal burn by tons for baseload and interchange sales?

John

Fuel Name	Fuel Cost (1000s)	Quantity	Fuel Unit	$/Unit
GAS MRT	7,939.994	1,230,546	mmBTU	6.452
GAS NGP	7,058.419	1,137,077	mmBTU	6.208
GAS PEPL	6,852.762	1,097,638	mmBTU	6.243
GAS TRKL	19.941	2,896	mmBTU	6.886
NUCLEAR	40,405.650	88,636,880	mmBTU	0.456
OIL MO	1,186.221	127,184	mmBTU	9.327
LAB COAL	213,307.300	172,021,900	mmBTU	1.240
MER COAL	83,111.090	61,884,640	mmBTU	1.343
RUS COAL	130,159.200	81,146,640	mmBTU	1.604
SIO COAL	109,628.900	65,372,020	mmBTU	1.677

John: The above figures are from the original benchmark run. Last four fuels are the coals. You will have to divide Quantity by the number of mmBTUs/ton. That number is usually in the low 20's, but I don;t know what it is.

At 09:00 AM 11/28/2006, you wrote:
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Would you like to see it?

Michael

At 08:31 AM 11/28/2006, you wrote:

Also are you able to breakdown coal burn by tons for baseload and interchange sales?

John

Greg:

Take a look at the numbers in the attached spreadsheet. The numbers seems reasonable to me (and I've been looking at them all day), but am interested in your take.

Michael

John:

Actually, the Rush Island explanation looks reasonable and we adopted their capacity guidelines for those two units.

I couldn't make as much sense out of the Sioux explanation. However, I did reduce the Sioux must run capacity to the levels they are talking about. And then the model can decide at what level to run the units. Seems like the Sioux reduction is not "real" but is done to reflect an accounting problem.

During the benchmark run, RealTime was almost exactly at Ameren's generation level for both Rush Island and Sioux, so think we are ok there. However, when we remove the limits on sales and those two plants start generating more, we need to be sure that Sioux's (Rush Island is already taken care of) capacity limits (if real) are taken into account.

So, if you could find out if the Sioux capacity reduction is real (or accounting) and if real, please get the derating information for me.

Michael

PS: The insert below is from an original submission file, uebase.dat. You can see in the CapacityMax section for Rush.2 that the capacity constraints were pretty well spelled out (e.g., at 2am on Tuesday's capacity dropped to 290 and at 6am it came back up to 592). RealTime includes these deratings. But the Sioux.1 CapacityMax section below is not so clear. If you could get Tim to give the capacity deratings (in English), I'll take another look at it.

```
!*****************************************************************************
******

Rush.2
        Transarea         UE
        Plant             Rush.Island
        StationGroup      UE.STEAM
        IOcoeffs2 [v3]    @RI2EDF @RI2.IO
        Fuel              rush.coal

        CapacityMax [wp] -
                    [2005] [m1]   [mon12am] 592 [tue12am] 592 [2am] 290 [6am]
592 -
                                  [wed12am] 592 [thu12am] 592 [2am] 380 [6am]
592 -
                                  [fri12am] 592 [sat12am] 592 [2am] 290 [6am]
```

```
592 -
                                [sun12am] 592

        CapacityMin      234

        Statecaps [v5] [ap] -
                       [2005]  [m1]  350  480 565  580  592

        StateAvail [v5]  [ap] -  !May 23 Update
                       [2005] [m1]  .02  .04  .14 .18 .520   ! for  10.0 por
2.6%

        Commit           2
        MinDown          72
        MinUp            72
        MeanTimeRep      72;
        MinTimeRep       72
        VOMcost          [2004] 1.39 [gr] .025

        StartFuel        [v2]    1295    6346
        StartHours       [v2]      8      24

        StartFuelName    [v2] rush.coal  Rush.oil !@oil.MO
        Startfuelratio   [v2]   0.5   0.5

        SRReservedMw [v2] @RIreg          !holdback for regulation, on and
offpeak,
                                          !see DPPeriods in system section
!****************************************************************************
******

Sioux.1
        Transarea        UE
        Plant            Sioux
        StationGroup     UE.STEAM
        IOcoeffs2 [v3]   @SX1EDF  @SX.IO
        Fuel             sioux.coal

        CapacityMax  [wp] -
                     [2005] [m1] [day] 428 [5am] 500  [m3] [day] 428 [5am] 456
-
                            [m7] [day] 428 [5am] 500  [m9] [day] 428 [5am] 456


        CapacityMin  [wp] -
                    [2005] [m1] [mon12am] 330  [tue12am] 428 -
                                [wed12am] 330  [thu12am] 428 -
                                [fri12am] 330  [sat12am] 428 -
                                [sun12am] 330


        Statecaps [v5] [ap] -
                       [2005] [m1] 375 410 445 465 500 [m3] 375 410 435 445
456 -
                              [m7] 375 410 445 465 500 [m9] 375 410 435 445
456

        StateAvail [v5]  [ap] -  !May 23 Update
                       [2005] [m1] .01 .01 .02 .05 .793   !for  11.7 por 1.0%
```

```
Commit          2
MeanTimeRep     72;
MinTimeRep      72
MinDown         72
MinUp           72
VOMcost         [2004] 1.92 [gr] .025

StartFuel       [v2]    1635    4510
StartHours      [v2]    8       24

startfuelname   [v2] Sioux.coal  SX.oil  !@oil.MO
startfuelratio  [v2]    .87   .13

    !   SRReservedMw [v2] @SXreg        !holdback for regulation, on and
offpeak,
                                        !see DPPeriods in system section
!*****************************************************************************
******
```

At 03:48 PM 11/29/2006, you wrote:
Michael - Tim Finnell's explanation that they do operate Sioux and Rush Island based on their modeling conventions is attached. Does this look reasonable to you? --John

I'll wait for Tim's call. I'm really not interested in how he set up the model, I'm interested in how the Sioux units run in reality.

At 10:40 AM 11/30/2006, you wrote:
Michael,

I spoke with Tim about your questions on Sioux. His explanation went into how he set up his model - way beyond my understanding. I gave him your number and he said he would call you and explain his answer.

I hope to have some "accounting prices" for fuel for you shortly. -- John

\brdrth
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Thu 11/30/2006 8:02 AM
To: Cassidy, John
Subject: Re: FW: Case No. ER-2007-0002 - Data Request No. 0365

John:

Actually, the Rush Island explanation looks reasonable and we adopted their capacity guidelines for those two units.

I couldn't make as much sense out of the Sioux explanation. However, I did reduce the Sioux must run capacity to the levels they are talking about. And then the model can decide at what level to run the units. Seems like the Sioux reduction is not "real" but is done to reflect an accounting problem.

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592 -
                               [wed12am] 592 [thu12am] 592 [2am] 380 [6am]
592 -
                               [fri12am] 592 [sat12am] 592 [2am] 290 [6am]
592 -
                               [sun12am] 592

        CapacityMin       234

        Statecaps [v5] [ap] -
                      [2005]  [m1]  350  480 565  580  592

        StateAvail [v5]  [ap] -  !May 23 Update
                      [2005] [m1]  .02  .04  .14 .18 .520   ! for  10.0 por
2.6%

        Commit            2
        MinDown           72
        MinUp             72
        MeanTimeRep       72;
        MinTimeRep        72
        VOMcost           [2004] 1.39 [gr] .025

        StartFuel         [v2]    1295    6346
        StartHours        [v2]      8       24

        StartFuelName     [v2] rush.coal  Rush.oil !@oil.MO
        Startfuelratio    [v2]   0.5   0.5

        SRReservedMw [v2] @RIreg          !holdback for regulation, on and
offpeak,
                                          !see DPPeriods in system section
!*******************************************************************************
******

Sioux.1
        Transarea         UE
        Plant             Sioux
        StationGroup      UE.STEAM
```

```
        IOcoeffs2 [v3]   @SX1EDF  @SX.IO
        Fuel             sioux.coal

        CapacityMax   [wp] -
                      [2005] [m1] [day] 428 [5am] 500   [m3] [day] 428 [5am] 456

                             [m7] [day] 428 [5am] 500   [m9] [day] 428 [5am] 456


        CapacityMin   [wp] -
                     [2005] [m1] [mon12am] 330  [tue12am] 428 -
                                 [wed12am] 330  [thu12am] 428 -
                                 [fri12am] 330  [sat12am] 428 -
                                 [sun12am] 330


        Statecaps [v5] [ap] -
                       [2005] [m1] 375 410 445 465 500 [m3] 375 410 435 445
456 -
                              [m7] 375 410 445 465 500 [m9] 375 410 435 445
456

        StateAvail [v5]  [ap] -   !May 23 Update
                       [2005] [m1] .01 .01 .02 .05 .793   !for  11.7 por 1.0%



        Commit           2
        MeanTimeRep      72;
        MinTimeRep       72
        MinDown          72
        MinUp            72
        VOMcost          [2004] 1.92 [gr] .025

        StartFuel        [v2]    1635    4510
        StartHours       [v2]    8       24

        startfuelname    [v2] Sioux.coal  SX.oil  !@oil.MO
        startfuelratio   [v2]     .87    .13

     !   SRReservedMw [v2] @SXreg        !holdback for regulation, on and
offpeak,
                                         !see DPPeriods in system section
!***********************************************************************
******
```

At 03:48 PM 11/29/2006, you wrote:
Michael - Tim Finnell's explanation that they do operate Sioux and Rush Island based on their modeling conventions is attached. Does this look reasonable to you? --John

Greg:

Do you mean that you want to see a "Sales at FPC Price" run without Joppa? Easy to do.

Michael

At 11:11 AM 11/30/2006, you wrote:
Michael, I have reviewed your spreadsheet and I think you have got the

format correct. I would like to see the without Joppa run formatted the same way you did on the spreadsheet on lines 29-34. Thanks We hopefully will have new sale prices on Friday. Hopefully. Thanks

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Wednesday, November 29, 2006 3:14 PM
To: Meyer, Greg
Subject: RealTime Results

Greg:

Take a look at the numbers in the attached spreadsheet. The numbers seems reasonable to me (and I've been looking at them all day), but am interested in your take.

Michael

Greg:

I put the Sioux capacity constraints in and the units do generate less than before.

For our standard runs of late, the Sioux plant generated 497,266 mWhs less and consequently the model sold 474,250 mwhs less.

Back of the envelop calculations:

```
Sales: 474,250 * $35.77 = $16,965,243      ($35.77 is the average sales amount)
Cost:  474,250 * $13.61 = $ 6,454,382      ($13.61 is the average cost of
generating sales)
                          ===========
Profit:                    $10,510,861
```

So, assuming buyers are available, constraining the Sioux capacity cost the system about 10 million dollars.

Tim's explanation was logical as far as I understand. To save money when the Sioux units are not heavily loaded (Midnight to 4am) the units burn 100% PRB coal. That coal is cheaper, but since it has less btus/pound it results in less capacity for the unit. But using 100% PRB causes more maintenance problems so they don't want to use it any more hours a day.

<u>If</u> we assume that there is a buyer for every megawatt we can generate (below the FPC), then we would need to look at the savings from Ameren's Sioux fuel plan and compare that number with the forgone profit of $10.5 million. However, can we make the assumption that there is a buyer for all of our generation?

John just sent me some new fuel prices. I think we need to resolve the Sioux constraints issue and the assumption about sales before we start making a lot of new runs. Just to recap some information:

Ameren's Benchmark Sales:	9,118,000 mwh	
RealTime's Benchmark Sales:	9,224,815 mwh	
RealTime Sales (no limit):	13,772,920 mwh	(no Sioux capacity constraints)
RealTime Sales (no limit):	13,298,670 mwh	(with Sioux capacity constraints)

In looking at the size of these numbers, and worrying about the assumption that we can make this volume of sales, I would be inclined to go with Ameren on the Sioux reduced overnight capacities. One less item to be different on. But, I'm just a mechanic here, you guys are the drivers.

Michael

At 12:37 PM 11/30/2006, you wrote:
Michael, I am aware of this Sioux plant modifications. I am concerned about the actual hours the unit is run on 100% PRB coal. I am also aware that at time of peak, the unit is then run on a 60PRB 40Ill to gat more generation out of the unit. Thanks I just want to make sure we get the benefits from the peak if we have to take the derating in the night.

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Thursday, November 30, 2006 11:16 AM
To: Meyer, Greg
Subject: RE: RealTime Results

Greg:

Attached is a new version of the AtCost spreadsheet I sent yesterday.

Michael

PS: Tim Finnell has just explained to me a limiting feature of the Sioux units. This new feature might reduce the amount of sales we can make when the limits are removed. I am going to put these new limits in now and see what happens.

At 11:11 AM 11/30/2006, you wrote:

>Michael, I have reviewed your spreadsheet and I think you have got the
>format correct. I would like to see the without Joppa run formatted the

>same way you did on the spreadsheet on lines 29-34. Thanks We
>hopefully will have new sale prices on Friday. Hopefully. Thanks
>
>-----Original Message-----
>From: Michael Rahrer [mailto:mrahrer@emelar.com]
>Sent: Wednesday, November 29, 2006 3:14 PM
>To: Meyer, Greg
>Subject: RealTime Results
>
>Greg:
>
>Take a look at the numbers in the attached spreadsheet. The numbers
>seems reasonable to me (and I've been looking at them all day), but am
>interested in your take.
>
>Michael

Greg:

Have you made any decisions about the Sioux capacity constraints? I have new fuel costs from John Cassidy and could make some new runs this weekend. Is there anymore new data coming (e.g., FPC) that I should wait for?

Michael

John:

I'm assuming those fuel prices are in cents/mmbtu. Correct?

I'm sending back your Prices for Dispatch file with another column added (to the right) labeled FPC Used. Those prices are the ones I'm using currently as the forward price curve. We came up with those numbers after some back and forth between us and Tim Finnell at the end of October. Hopefully, I haven't been using the wrong numbers for a month. Please let me know.

Michael

At 12:07 PM 12/4/2006, you wrote:

Michael,

Attached below in the excel file are Staff's final proposed dispatch prices for natural gas and electric as well as Staff adjusted on-peak and off-peak market energy prices.

For natural gas and oil use a fixed price (same price for each month) for both the dispatch prices as well as the accounting prices to price out the generation output.

Gas and Oil Dispatch Prices and Accounting Prices:

PEPL	$707.16	(PEPL - Peno Creek, Goose Creek, Raccoon Creek, Audrain)
NG	$704.35	(NGP - Pinckneyville & Kinmundy)
MRT	$688.88	(MRT - Meramec 2, Venice 2-5, Viaduct, Kirksville)
Trunkline	$744.50	(Trunkline - Audrain)
Oil	$1482.54	(Oil - Meramec 1, Venice 1, Mexico, Moberly, Moreau, Fairgrounds, Howard Bend)

(Do not use the monthly distribution of gas and oil dispatch and accounting prices that I sent to you previously on Thursday, November 30, 2006.)

For Coal Dispatch Prices use these fixed price (same price for each month) dispatch prices :

Labadie $121.27
Sioux $166.89
Rush Island $125.61
Meramec $145.74

For Coal Accounting Prices use these fixed prices for each month:

Labadie $115.01
Sioux $153.61
Rush Island $153.83
Meramec $128.12
For Hourly Market Energy Prices refer to the "Hourly Electric Prices" tab on the "Prices for Dispatch" excel file below.

Please call us with any questions, Greg and I can be reached at 573-526-3487. Mike Proctor can be reached at 314-877-2778 ext 238. Thanks -- John

From: Proctor, Mike
Sent: Monday, December 04, 2006 9:05 AM
To: Meyer, Greg; Cassidy, John
Subject: Final Proposed Prices

Attached is a worksheet that contains the final proposals for dispatch and electric prices.
<<Prices for Dispatch.xls>>

John:

The numbers were from Tim. The three of us were discussing these prices when I was in Denver on 10-26.

(Just talked with Greg)

Whew, just found it. The FPC values I'm using came from worksheet Purch in spreadsheet file MPSC DR 0140.XLS.

Michael

At 01:55 PM 12/4/2006, you wrote:
Michael-

Yes, the prices are in cents/mmbtu.

What was the source for the FPC prices you had been using? How were they developed?

John

\brdrth
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Monday, December 04, 2006 12:37 PM
To: Cassidy, John
Subject: Re: FW: Final Proposed Prices

John:

I'm assuming those fuel prices are in cents/mmbtu. Correct?

I'm sending back your Prices for Dispatch file with another column added (to the right) labeled FPC Used. Those prices are the ones I'm using currently as the forward price curve. We came up with those numbers after some back and forth between us and Tim Finnell at the end of October. Hopefully, I haven't been using the wrong numbers for a month. Please let me know.

Michael

At 12:07 PM 12/4/2006, you wrote:

Michael,

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For natural gas and oil use a fixed price (same price for each month) for both the dispatch prices as well as the accounting prices to price out the generation output.

Gas and Oil Dispatch Prices and Accounting Prices :

PEPL	$707.16	(PEPL - Peno Creek, Goose Creek, Raccoon Creek, Audrain)
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Please call us with any questions, Greg and I can be reached at 573-526-3487. Mike Proctor can be reached at 314-877-2778 ext 238. Thanks – John

---

From: Proctor, Mike
Sent: Monday, December 04, 2006 9:05 AM
To: Meyer, Greg; Cassidy, John
Subject: Final Proposed Prices

Attached is a worksheet that contains the final proposals for dispatch and electric prices.
<<Prices for Dispatch.xls>>

John & Greg:

I know that Sioux blends fuels(PRB and Illinois coal), but in all of the fuel files I have, they just mention one price for Sioux coal. Consequently, the model currently only burns one "priced" fuel for Sioux.

If we simulated the fuel switching, it might illuminate Ameren's rhyme & reason for running that plant the way it does. Probably come pretty close with a pencil and paper too.

Michael

John:

My numbers correspond to your Model Assumption item numbers.

1. Yes.

2. The Callaway planned outage is from Nov 7 to Nov 30. Labadie 1 and Sioux 1 both have planned outages that go from October, through November and into early December. So, I couldn't avoid some coincidence with other major outages and still keep the Callaway outage in November. I could move the Callaway outage into December. Your opinion?

3. Yes

4. The Audrain units are listed under PEPL gas and Trunkline gas. Up to now, I've been using Trunkline gas for Audrain. What fuel is right for Audrain?

5. Yes

6. Yes, plus I made the accounting cost changes for LAB and MER from your 12/05 email.

7. Yes

8. I am using the last column of values (i.e., 19.95 and 73.41) as the FPC for both purchases and sales.

9. See below.

10. I have your schedule for Rush Island 2, however I also have a reduced schedule for RI 1.
RI 1 runs at 290 from 2am to 6am every Monday
RI 1 runs at 380 from 2am to 6am every Wednesday
RI 1 runs at 290 from 2am to 6am every Friday
RI 1 runs at 380 from 2am to 6am every Sunday

Is that correct?

11. Ok.

12. Yes. After talking with Tim Finnell, I found out that essentially .64% of fuel consumed by Meramec is MRT GAS. RealTime has a Miscellaneous fuel type that can be set to a percentage. So Meramec does use a small portion of gas.

13. For Callaway, I am using the rightmost column of values (i.e., 1243, 1240, 1238, 1233, etc). as the Callaway monthly maximum capacities. This is from MPSC 0073suppl 1 callaway2006.pdf.

For the other major units, I was **not** using the monthly max capacities from MPSC 0073 suppl1 - ue rating table hc.xls. I will make those changes next.

14. I am modeling APL as a fixed purchase contract at 160mw/hour all year long at a price of $12.51. We currently always buy 1,401,600mwhs from this contract (8760 hours * 160mw). Fixed purchase means that it will purchase the exact amount specified for the specified price. I can change the contract to an "economic purchase" contract. In that mode, the model will only purchase power when it is economic to do so. I can change the price of APL to $19.96, but unless I switch the contract type to "economic" it will still purchase the same amount. Do you want this to be an "economic purchase" contract versus a "fixed purchase" contract?

9. Let's do all of these other items first, make some runs and then play with the Sioux capacity reduction scenario. Up till now, I have not limited Sioux capacity and have used only one Sioux coal price. In RealTime, it is easy to change capacities by hour, not so easy to change fuel costs by hour. I will have to think of a way to do this. Tim told me his model didn't do it either.

Michael

Are you still there, took an early dinner tonight (wife has to go out) but back in the office now.

I think using the real monthly capacity limits is the correct way to go. And I've already updated all of the units to reflect the capacities limits.

Looks like the values in the attached file are the same as the MPSC 0073 file I used this afternoon.

I'd say we're ready to make some runs.

At 06:05 PM 12/5/2006, you wrote:

<<DR73PlantCapabilities.xls>>

Michael,

Look at Meramec 1 in the file above.

Tim models coal plants using a year ending average for each month. For Meramec he takes the year average of 123 and uses it in all 12 months. The effect is he is making more available in the summer than the summer avg. shows and less available in the winter than the winter avg. shows.

Do you think we should use capabilities for each month? (ie for Meramec 1: Jan 125, Feb 125, March 125, April 124 etc... August 119 etc..) Or should we use a summer, winter & seasonal average? (ie. For Meramec 1: Summer mos June - August 120; winter months Dec-Feb 125; and seasonal 6 shoulder mos. 123). What do you recommend?

We should match Tim's capabilities by summer / winter and seasonal (6 mos.) for all of the CTs and the hydros.

I think you have the correct Callaway average net capabilities, Jan 1243, Feb 1240, Mar 1238 etc...

John

John:

Attached spreadsheet shows an equivalent outage hour comparison between the September 8 Ameren output and the current RealTime output. The data is pretty good but not perfect. I used your recent average unit capacities for comparison (Ameren has slightly different--and averaged values) and I'm assuming the Outage Hours in the Ameren output are equivalent hours.

RealTimes outages allow for 260,836 more mwhs of generation (.65% of total generation) than does Ameren's outages. (Meaning RealTime has fewer outage hours).

Callaway accounts for 70,760 of the mwhs, and this can be discounted because we know we made changes here. That leaves about 190,076 extra mwhs due to fewer outages for RealTime. Almost all of the difference can be traced to Rush Island 1 & 2. I am going to go back and check their outages with the values from Ameren.

Michael

PS: I put in the new APL cost of $20.10, but left it as a fixed purchase contract (160mws every hour)

These changes are all simple to make.

At 01:35 PM 12/6/2006, you wrote:

Michael,

There have been some more changes made to the accounting prices for coal. The changes are minor.

Here are the final accounting prices for coal:

Labadie $1.1335

Rush Island $1.5383

Meramec $1.2486

Sioux $1.5341

Sioux PRB Price = $1.5276
Sioux ILL Price = $1.5659

As a result Mike, will be readjusting his coal prices for dispatch and his off peak market energy prices. We will forward those sometime later today. They will also be minor in impact. Sorry for all these changes.

John

<<FINAL COAL COST DIRECT FILING.xls>>

Thanks, I'll get on this first thing tomorrow. How is our time schedule?

At 04:10 PM 12/6/2006, you wrote:

Michael
Here are Mike Proctor's final Off Peak Market Energy Prices by Hour (new factor up is 16.04%). See attached excel file below. (Onpeak market prices are unchanged).

Also here are the final coal dispatch prices that Mike provided:

Coal Units cents per MMBTU
Labadie 121.24
Sioux 164.29
Rush Island 125.61
Meramec 145.74
Average 139.22

Here is the Sioux coal dispatch price breakdown:

Sioux Sioux
PRB ILL
131.99 323.87

John

From: Proctor, Mike
Sent: Wednesday, December 06, 2006 2:39 PM
To: Cassidy, John
Subject: RE: HERE ARE THE FINAL ACCOUNTING PRICES FOR COAL

John,
Attached is my update with your revised prices.
On the coal dispatch prices I included the breakout for Sioux on PRB and ILL coal.
Mike
<<Prices for Dispatch_r1.xls>>

John:

The dispatch and accounting costs for PRB and ILL coal are vastly different. In trying to discover their reasons for running 100% PRB four hours a day, what fuel cost should I use. The blended accounting cost (for the 60/40 blend) difference is less than two cents and the savings is only about $65/day.

But if I use the dispatch cost blend, it (the 60/40 blend) is about 77 cents higher than 100% PRB.

So, which one to use in my study?

Michael

John:

The spinning reserve requirement is set at 101mw all the time.

Send me a phone number and I will call you in a few minutes.

Michael

At 08:57 AM 12/7/2006, you wrote:
Michael,

Greg wants to be sure that we have adequate spinning reserves in the case. UE has certain spinning reserve requirements that they must meet. Are your spinning reserves matching Tim's levels?

John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Thursday, December 07, 2006 7:09 AM
To: Cassidy, John
Subject: Sioux Fuel

John:

The dispatch and accounting costs for PRB and ILL coal are vastly different. In trying to discover their reasons for running 100% PRB four hours a day, what fuel cost should I use. The blended accounting cost (for the 60/40 blend) difference is less than two cents and the savings is only about $65/day.

But if I use the dispatch cost blend, it (the 60/40 blend) is about 77 cents higher than 100% PRB.

So, which one to use in my study?

Michael

John & Greg:

Attached file shows the cost/generation comparisons between four runs.

1. Sales at Margin (no profit), with Joppa
2. Sales at Margin (no profit), without Joppa
3. Sales at FPC Value (profit), with Joppa
4. Sales at FPC Value (profit), without Joppa

Don't know when you want to start getting all of the detailed reports. I've attached the Brief Summary report for the "Sales at FPC Value (profit), with Joppa" run. If you look at this file via wordpad or notepad, you should be able to reduce the font size and get the report to print on two pages.

If you see anything in these attachments that you have questions about, let me know.

I'm starting to work on the Sioux reduction now.

Michael

John:

In starting the Sioux tests, I noticed that the current dispatch cost for Sioux coal is $1.6429/mmbtu.

In the last email, the Sioux dispatch costs were separated by coal. PRB = $1.3199/mmbtu and ILL = $3.2387/mmbtu.

At a 80/20 split the dispatch cost should be 1.70366

At a 60/40 split the dispatch cost should be 2.08742

Is the current dispatch cost ($1.6429) correct?

Michael

But the actual load data I have is for 2005. Is that ok? When Staff provides the load will it be for 7/1/05 to 6/30/06?

At 12:38 PM 12/7/2006, you wrote:
Michael - Change the heading to show your study starting on 7/1/05 and stop on 6/30/06. This represents test year.

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Thursday, December 07, 2006 11:23 AM
To: Cassidy, John; Meyer, Greg
Subject: Model Output

John & Greg:
Attached file shows the cost/generation comparisons between four runs.

1. Sales at Margin (no profit), with Joppa 2. Sales at Margin (no profit), without Joppa 3. Sales at FPC Value (profit), with Joppa 4. Sales at FPC Value (profit), without Joppa

Don't know when you want to start getting all of the detailed reports. I've attached the Brief Summary report for the "Sales at FPC Value (profit), with Joppa" run. If you look at this file via wordpad or notepad, you should be able to reduce the font size and get the report to print on two pages.

If you see anything in these attachments that you have questions about, let me know.

I'm starting to work on the Sioux reduction now.

Michael

What coal split at Sioux are you simulating?

At 03:16 PM 12/7/2006, you wrote:

Michael,

I will need the quantity of coal burned in tons in order to determine coal inventories:

Here are the corresponding accounting prices for coal in $ / ton for each plant:

Labadie $19.862 / ton (equates to the $1.1335 cents/mmbtu)

Rush Island $25.8304 / ton (equates to the $1.5383 cents/mmbtu)

Meramec $21.5864 / ton (equates to the $1.2486 cents/mmbtu)

Sioux $28.5077 / ton (equates to the $1.5341 cents/mmbtu)

Sioux Breakdown is: PRB = $26.9229 and Illinois Coal = $36.3300

John

Is there any check I can do on Labadie?

I'm writing an email on Sioux now.

At 08:34 PM 12/7/2006, you wrote:
Michael - These tons look reasonable against actual historical burns. Labadie's may be a bit low. I guess the only new variable you need is net system input?

John

\brdrth
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Thursday, December 07, 2006 7:11 PM
To: Cassidy, John
Subject: Re: Calculations of quantity of coal burned in tons by plant

John:

Attached is a file showing coal tons consumed by month. As always, let me know as soon as possible if the numbers look wrong.

Michael

At 03:16 PM 12/7/2006, you wrote:

Michael,

I will need the quantity of coal burned in tons in order to determine coal inventories:

Here are the corresponding accounting prices for coal in $ / ton for each plant:

Labadie $19.862 / ton (equates to the $1.1335 cents/mmbtu)

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Sioux $28.5077 / ton (equates to the $1.5341 cents/mmbtu)

Sioux Breakdown is: PRB = $26.9229 and Illinois Coal = $36.3300

John

John:

With Sioux set to burn an 83/17 percent blend of PRB/ILL coal, the system sells 14,504,460 mwhs total.

I set the Sioux fuel dispatch price to $2.0874 to reflect a 60/40 percent blend of PRB/ILL coal and the system then sold 14,500,680 mwhs. That is 3,780 mwhs less.

The Sioux dispatch price (at max capacity of 502mw) with the 83/17 blend is $18.16. Using the 60/40 blend, the dispatch price is $18.76.

I looked at the FPC values for hours 1 through 4 and compared them to the two dispatch prices. (There are 1460 hours total between midnight and 4am, i.e., 4 hours/day * 365 days) There are 1,179 hours where 18.16 is less than or equal to the FPC value, meaning Sioux can sell power in 1,179 hours between midnight and 4am.

There are 1,082 hours where 18.76 is less than or equal to the FPC value. The difference between these two values is 97 hours. So for 97 more hours during the year, the 60/40 blend cost will rise above the FPC value (meaning no sales in those hours) than the 83/17 blend.

The two Sioux units actually generated 11,376mwhs less in the 60/40 blend run. Some other coal units generated just a tad more (like 100 to 200 more mwhs over the whole year) and purchases increased by about 6,800 mwhs.

I want to think a little further about this overnight. If the numbers hold, I believe we can discount the reasons for limiting Sioux capacity during four hours every morning.

Michael

I'm on it. Have 67 minutes.

At 12:43 PM 12/8/2006, you wrote:
Michael,

Staff is having Ameren conduct a test burn on Venice Unit 5 in December.
In your attached model you show 3252 mwh being generated by Venice 5
during December. Can you identify how many of these December 3252 mwh's
went towards making interchange sales in the month?

If yes, we need a quick turnaround on this. Greg has a meeting at 1:30
pm on this subject. Apparently Ameren wants to include the cost
difference (normal running coal vs. running gas for this test burn over
3 days) include in the cost of service.

Thanks -- John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Friday, December 08, 2006 10:41 AM
To: Cassidy, John
Subject: Output

John:

The attached text file contains all of the reports you asked for. If you go into Wordpad (or something) and set the font size to 7, landscape mode, left/right margins to .4, it should print out ok, except that the page breaks won't be right.

I've sent a program to Dave Elliot (he may not be able to receive it via email) that will print the output in a nice fashion.

Michael

PS: For my typed testimony, will your office put it in the correct form (e.g., double-spaced, lines numbered, etc.)?

It is most likely that all of the December Venice CT5 mwhs went to interchange sales.

In fact, given the December pattern, I wouldn't be surprised to find out that all of the Venice CT5 mwhs went to sales.

I will look further at this.

At 12:43 PM 12/8/2006, you wrote:
Michael,

Staff is having Ameren conduct a test burn on Venice Unit 5 in December. In your attached model you show 3252 mwh being generated by Venice 5 during December. Can you identify how many of these December 3252 mwh's went towards making interchange sales in the month?

If yes, we need a quick turnaround on this. Greg has a meeting at 1:30 pm on this subject. Apparently Ameren wants to include the cost difference (normal running coal vs. running gas for this test burn over 3 days) include in the cost of service.

Thanks – John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Friday, December 08, 2006 10:41 AM
To: Cassidy, John
Subject: Output

John:

The attached text file contains all of the reports you asked for. If

you go into Wordpad (or something) and set the font size to 7, landscape mode, left/right margins to .4, it should print out ok, except that the page breaks won't be right.

I've sent a program to Dave Elliot (he may not be able to receive it via email) that will print the output in a nice fashion.

Michael

PS: For my typed testimony, will your office put it in the correct form (e.g., double-spaced, lines numbered, etc.)?

John:

What worksheet do I use (Normalized, Wthr Normal or Actual)?

Michael

At 04:14 PM 12/8/2006, you wrote:

Michael - Attached below is staff's normalized net system input to use in the production cost model. Please call me with any questions. 573-526-3487.

John

From: Hagemeyer, Jeremy
Sent: Friday, December 08, 2006 2:42 PM
To: Cassidy, John
Subject: FW: Updated NSI

From: Lange, Shawn
Sent: Friday, December 08, 2006 2:36 PM
To: Meyer, Greg; Hagemeyer, Jeremy
Subject: Updated NSI

Please disregard the previous email and use this NSI. Thanks
<<Test year hourlyER-2007-0002(AUE).xls>>

Shawn Lange
Utility Engineering Specialist II
MO Public Service Commission
(573) 751-7517 (voice)
(573) 526-0145 (fax)
shawn.lange@psc.mo.gov

John:

Getting into the testimony. Question for you. I am saying where I got the Ameren benchmark information and re-checking it to make sure.

I am using spreadsheet file: FBREPORT_PSC05_SEP8.XLS and the worksheets shown below.

Net generation from worksheet: Net GWH (monthly)
Cost from worksheet: Cost & Revenue
BTUs from worksheet: GBTU
Heat rates from worksheet: HEAT RATE

In all worksheets, I am using CASE: WS.

Is all of the above correct?

Michael

John:

Spent most of the time this weekend working on verifying the benchmark run and the benchmark related testimony. Benchmark run and most of the benchmark testimony is ready for you.

I started making some runs with the new load. It is for 7/1/05 to 6/30/06. What do I do about the forward price curve? The values you gave me were for 1/1/05 to 12/31/05. Do I use the 1/1/05 to 6/30/05 values for 01/01/06 to 06/30/06 values, or do I use something else?

Plus:

Labadie 1 has a planned outage from 3/17/05 to 6/3/05. Does any of that translate to the 07/01/05 to 06/30/06 year?

Same with Meramec 1, planned outage 03/12/05 to 05/19/05

Same with Rush Island 1, planned outage from 02/19/05 to 04/01/05

I will be here all Monday and Tuesday. Have plans for Wednesday until about 2pm. Here all day Thursday and all Friday afternoon. Testimony is due on Thursday right?

Do you want me to send you the testimony I have now?

Michael

John:

You realize that my testimony is only about the benchmark run thus far? I'll send it in a few minutes. Does Ashley get it first, or do you?

Michael

About the new Staff runs, the FPC values you sent run from 1/1/05 to 12/31/05. If you want me to grab that period and copy it to 1/1/06 to 6/30/06, will the days of the week be off? Jan 1, 05 is Saturday and Jan 1, 06 is a Sunday. Do you care?

What about moving 1/1/05 to 6/30/05 unit planned outages to 1/1/06 to 6/30/06?

John:

In the new 7/1/05 to 6/30/06 run, do we include Taum Sauk?

Still need an answer about the units who have a planned outage during 1/1/05 through 6/30/05, do I move those planned outages into 2006? Or do you have a new planned outage schedule for 2006?

Michael

John:

I would call, but need this to be on paper.

Ok. I am going to make the staff run now. The run will include the items we discussed last week.

Just to name a few:
1. new fuel prices (dispatch & accounting)
2. new FPC values
3. new hourly load
4. new callaway capacities
5. unlimited sales/purchases.

The Staff run will be from July 1, 2005 through June 30, 2006.

You want the report to be labeled "12 months ending 6/30/06"?

But, I am being dense on the unit planned outages. For example, Meramec 1 has a planned outage from 3/12/05 through 5/15/05. That unit has no planned outages for 2006. The question is, do you want me to change that outage to occur in 2006?

Michael

At 01:48 PM 12/11/2006, you wrote:
Michael -- We are not trying to redo any inputs at this stage. I just wanted the headings to be labeled 12 mos. Ending 6/30/06 instead of 12/31/05 - without redoing any inputs. Keep everything like we had for calendar year ending 12/31/05. The planned outages will stay the same. Taum Sauk will stay in. What we need is the run to reflect all of the 16 points we went over last week via email and also to reflect the new weather normalized net system input that we sent to you last week. Then we need one run with eei and one run without eei. Greg and I will call you this afternoon to discuss the fuel runs and what they should include.

John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Monday, December 11, 2006 12:35 PM
To: Cassidy, John
Subject: New Staff Runs

John:

In the new 7/1/05 to 6/30/06 run, do we include Taum Sauk?

Still need an answer about the units who have a planned outage during 1/1/05 through 6/30/05, do I move those planned outages into 2006? Or do you have a new planned outage schedule for 2006?

Michael

Could you develop a schedule that shows the MWH's of interchange sales that were made for the year by each unit (ie. EEI, Audrain, Raccoon Creek, Goose Creek, Meramec 2, etc...) John

Yes sort of, but it won't be especially accurate.

What I would do is to make a run with sales and then without sales and then compare the unit outputs. That will give you some idea, but won't be perfect. Reason being is that making no sales affects the the dispatch.

I plan to show you a schedule of hourly sales and sale prices so that we can verify that the sales are being made and indeed at a good profit.

======================

It seems to me like the FPC value should be related to load, but maybe it isn't. The Jan 1, 2005, hour 1 load value is about 3,200 (this is Ameren's load value). The Jan 1, 2006, hour 1 load value is about 4,200 (this is Staff's load value) and yet you want me to use the Jan 1, 2005 FPC value for Jan 1, 2006. Is that right?

At 04:44 PM 12/11/2006, you wrote:

Could you develop a schedule that shows the MWH's of interchange sales that were made for the year by each unit (ie. EEI, Audrain, Raccoon Creek, Goose Creek, Meramec 2, etc...) John

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John/Greg:

Attached spreadsheet file contains some output from the Staff data RealTime runs.

The worksheet FuelTons contains the coal tons consumed in both the Joppa (EEI) run and the no Joppa run.

The total system cost for the Joppa run was $22,848,700. The total system cost for the no Joppa run was $167,390,380.

The worksheet SaleChanges shows the generation difference between a Joppa run with sales and a Joppa run without sales. The spreadsheet values can be construed to show the units that made the sales. As you can see, the no sales run overgenerated by 471,843 mWhs. Over generation usually happens because all units at their minimum capacities (the coal units anyway) is greater than the demand for the hour. The total system cost of the run with Joppa but without sales was $403,115,770.

I can send you whatever reports you need in the morning.

Michael

Greg/John:

You asked some questions about the APL purchase contract in an email last week. Here are the results of several runs exploring your questions. The APL purchase price was changed from $12.51/mw (Ameren version) to $20.10/mw (Staff version). FYI: All coal units can generate for less than $20.10/mwh.

In the original Staff run, most of the APL contract is a Fixed Purchase contract, so 1,311,344 mwhs were purchased from this contract because the model was forced to make the purchase. The total system cost for this run was $22,848,700 and that model sold 14,438,490 mwhs.

I made a second run where the APL contract was changed to an Economy Purchase contract meaning that the model may choose to purchase from APL based on the cost. This model purchased 83,932 mwhs from APL. The total cost of this run was $51,271,830 and the model sold 13,203,550 mwhs. This makes perfect sense. The model had 1,227,412 less mwhs to sell (difference in purchases from APL) and therefore did end up selling 1,234,940 less mwhs. That is the reason the total system cost increased, less revenue from sales.

In RealTime, a purchase power contract can be defined to allow it to sell power. The default is that purchase power is only used to serve domestic load. I turned that option on for the APL contract and made another run. This model was almost identical to the first model. The total system cost was $23,013,400. A total of 1,234,565 mwhs were purchased from APL and the model sold 14,354,290 mwhs.

I guess you can draw your own conclusions. If APL purchases are forced, the model can sell more power resulting in a lower total cost. If APL purchases are not forced (and the power is not available for resale), the model buys less APL power and sells less.

Michael

Yes/ 1. The 14 model assumptions that we sent via email on Dec 4, 2006 to you.
NO. Sioux (assumption #9) is not running in a limited state. I have some results from a quick study I just sent to you.

Yes. 2. Final accounting prices for coal-
Labadie $1.1335,
Rush Island 1.5383,
Meramec 1.2486,
Sioux $1.5341 sent on Dec 6.

Yes. 3. Final coal dispatch prices
Labadie 1.2124,
Rush $1.2561,
Meramec$1.4574

Sioux $1.6429 sent on Dec 6.

NO. 4. Nuclear price of .3438 for all 12 mos.
I was using a value that changed monthly. I am now setting the DISPATCH price of Nuclear fuel to .3438

I had an adder of 0.1117 added to the accounting Nuclear price. Is that correct?

Yes. 5. APL price of 20.10

Yes. 6. Gas and oil accounting and dispatch prices being the same
pepl 7.0716,
ng 7.0435,
mrt 6.8888,
trunk 7.4450
oil 14.83 **I am using 14.8254**

Let me know about the Nuclear accounting cost and I will get these runs right back to you.

At 10:33 AM 12/12/2006, you wrote:
Michael

Please confirm that both of the model outputs with Joppa and without Joppa that were sent this morning have the following:

1. The 14 model assumptions that we sent via email on Dec 4, 2006 to you.
2. Final accounting prices for coal- Labadie $1.1335, Rush Island 1.5383, Meramec 1.2486, Sioux $1.5341 sent on Dec 6.
3. Final coal dispatch prices Labadie 1.2124, Rush $1.2561, Meramec $1.4574 Sioux $1.6429 sent on Dec 6.
4. Nuclear price of .3438 for all 12 mos.
5. APL price of 20.10
6. Gas and oil accounting and dispatch prices being the same pepl 7.0716,ng 7.0435, mrt 6.8888, trunk 7.4450 oil 14.83 that was also sent Dec 6.

John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Tuesday, December 12, 2006 9:11 AM
To: Cassidy, John
Subject: Joppa Output

John:

Attached two files are from the Joppa (J) run.

Open these files with WordPad (not Word). WordPad in under Accessories.

When you open file JBrf.RTF (the brief summary report), you can just print it.

When you open file JElem.RTF (all of the monthly reports), you must first go to Page Setup (under File) and set the orientation to Landscape. And then you can print it.

I found a way to put page breaks in the Elem output file.

Michael

Greg:

Attached file shows fuel differences (in mmBtus) between a sales run and a no sales run. the difference can be considered to be a pretty accurate assessment of the mmBtus required to make the sale.

Do you want me to convert coal mmBtus to tons?
Michael

John:

Our emails probably crossed paths. I updated the fueltons.csv file from a minute ago to also include a "no joppa, no sales" run.

Michael

At 12:30 PM 12/12/2006, you wrote:
Michael in the attached email above you provided fuel tons. With the changes you made to callaway prices, would the coal fuel tons change in the file above? If yes, please send me the coal fuel tons burned by the model like this excel spreadsheet shows. John

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Tuesday, December 12, 2006 12:23 AM
To: Cassidy, John; Meyer, Greg
Subject: Staff Output

John/Greg:

Attached spreadsheet file contains some output from the Staff data RealTime runs.

The worksheet FuelTons contains the coal tons consumed in both the Joppa (EEI) run and the no Joppa run.

The total system cost for the Joppa run was $22,848,700. The total system cost for the no Joppa run was $167,390,380.

The worksheet SaleChanges shows the generation difference between a Joppa run with sales and a Joppa run without sales. The spreadsheet values can be construed to show the units that made the sales. As you can see, the no sales run overgenerated by 471,843 mWhs. Over generation usually happens because all units at their minimum capacities (the coal units anyway) is greater than the demand for the hour. The

total system cost of the run with Joppa but without sales was
$403,115,770.

I can send you whatever reports you need in the morning.

Michael

Leon:

Somewhere in all of these attachments is my testimony (I renamed it to Rahrer_testimony2.doc). The new testimony starts on page 20.

The other files are the attachments that I reference. Model printout and what not.

RT_AMB_Summary	- Realtime summary report for Ameren Benchmark
RT_AMB_Monthly	- Realtime monthly reports for Ameren Benchmark
RT_Staff_Summary	- Realtime summary report for Staff Run
RT_Staff_Monthly	- Realtime monthly reports for Staff Run
RT_AMB_Benchmark	- Spreadsheet file comparing Ameren benchmark to RealTime benchmark
RT_AMB_Outages	- Spreadsheet file comparing Ameren unit outages to RealTime outages.

I am going to just send the testimony to Lena and tell her that you have it also.

Michael

Greg:

I did take a quick look at the differences. Load increased (from weather normalized to normalized) by 1,318,434 mwhs and sales decreased by 1,239,810 mwhs. And total system cost went up to $81,824,370, an increase of $58,838,903.

Michael

John:

For the Staff Run:

Dispatch Nuclear fuel cost:	$0.3438/mmBTU	(constant, i.e., does no vary over time)
Accounting Nuclear fuel cost:	$0.4546/mmBTU	(constant)
Callaway Input Heat Rate:	9.984/mmBTU/MWH	(constant)
Callaway Variable O&M:	$3.08/MWH	(constant)
Callaway Dispatch cost:	$6.51/MWH	Fuel Portion: $3.43. O&M Portion: $3.08
Callaway Accounting cost:	$4.54/MWH	

For the AmerenUE Benchmark Run:

Dispatch Nuclear fuel cost:	$???.??/mmBTU	(varies, see below)
Accounting Nuclear fuel cost:	$???.??/mmBTU	(varies, see below)
Callaway Input Heat Rate:	9.984/mmBTU/MWH	(constant)
Callaway Variable O&M:	$3.08/MWH	(constant)
Callaway Dispatch cost:	$?.??/MWH	Fuel Portion: $???.??. O&M Portion: $3.08
Callaway Accounting cost:	$4.55/MWH	

Dispatch Fuel Cost by month
01-01-2005:00 0.34
02-01-2005:00 0.34
03-01-2005:00 0.341
04-01-2005:00 0.342
05-01-2005:00 0.346
06-01-2005:00 0.348
07-01-2005:00 0.351
08-01-2005:00 0.35
09-01-2005:00 0.346
10-01-2005:00 0.344
11-01-2005:00 0.341
12-01-2005:00 0.34

Accounting Fuel Cost by month
01-01-2005:00 0.4517
02-01-2005:00 0.4517
03-01-2005:00 0.4527
04-01-2005:00 0.4537
05-01-2005:00 0.4577
06-01-2005:00 0.4597
07-01-2005:00 0.4627
08-01-2005:00 0.4617
09-01-2005:00 0.4577
10-01-2005:00 0.4557
11-01-2005:00 0.4527
12-01-2005:00 0.4517

Determining Accounting Fuel Cost.

For both the AmerenUE run and the Staff run I computed the accounting cost for nuclear fuel by taking the Callaway generation amount, multiplying by $0.936/mwh and then adding $1,590,000. I took that number and divided by the total Callaway heat input (in mmBTUs) to get a extra amount that I added to the Dispatch fuel cost.

So, in the Staff run

Callaway generation:	9,322,490 MWH
Times the Fuel surcharge:	$0.936/MWH
Equals:	$8,725,851
Plus disposable cost	$1,590,000/year
Equals:	$10,315,851
Divided by heat input:	93,123,840 mmBTUS
Equals:	$0.1108/mmBTU

That is what I added to the dispatch fuel cost to get the accounting fuel cost.

Michael

At 09:21 AM 12/14/2006, you wrote:

Michael - What is your nuclear dispatch cost? What is Company's nuclear dispatch cost? Is there a difference in the nuclear accounting and dispatch cost? -John

John:

You sent me some PRB and ILL coal costs (PRB = 152.76 cents/mmbtu, ILL = 156.81 cents/mmbtu) once, but I don't know whether those were dispatch or accounting costs. Those numbers are so close that the difference in a ton of it is less than a dollar. Does that seem right?

Can you give me both costs for both fuels so I can check out some issues with the Sioux plant?

Is the higher SO2 content of the ILL coal included in the cost of the coal?

Michael

John:

Thanks for the fuel prices. I want to make some runs to test the Ameren theory about scaling Sioux capacity back for six months of the year and every night for four hours starting at midnight.

Tim Finnell called me today to ask about some unit generation info. He said the biggest difference between their new run and the Staff run was that their Sioux plant generation was 400,000mwhs less than the Staff model. He speculated that it was because we didn't scale Sioux capacity back, and he is probably right. But, at this point we don't know that scaling them back is the economic thing to do. So, it got me thinking that a few test runs should be made.

We discussed the Sioux scale back in the email containing 14 Staff model assumptions (Sioux was item # 9)

Michael

At 12:46 PM 12/20/2006, you wrote:

Michael:

Below are the coal dispatch prices developed by Mike Proctor for your records:

Coal Units	cents per MMBTU		
Labadie	121.24	PRB	ILL
Sioux	164.29	131.99	323.87
Rush Island	125.61		
Meramec	145.74		
Average	139.22		

The accounting coal dispatch prices are summarized in the attached excel file. UE plans to burn roughly 620,000 tons of Illinois coal at Sioux. Approx. 420,000 tons are under contract and the 26.85 price at the mine is final. The transportation price related to this 420,000 tons may increase somewhat. I used these prices as a surrogate price for the remaining 200,000 tons that they plan to burn, because the 200,000 tons contract terms are not final (subject to a test burn to be completed this week). I also used the transportation terms as a surrogate as well. The $26.85 is based on the terms of the existing ILL coal contract.

-----Original Message-----
From: Michael Rahrer [mailto:mrahrer@emelar.com]
Sent: Wednesday, December 20, 2006 11:04 AM
To: Cassidy, John
Subject: Fuel Prices

John:

You sent me some PRB and ILL coal costs (PRB = 152.76 cents/mmbtu, ILL = 156.81 cents/mmbtu) once, but I don't know whether those were dispatch or accounting costs. Those numbers are so close that the difference in a ton of it is less than a dollar. Does that seem right?

Can you give me both costs for both fuels so I can check out some issues with the Sioux plant?

Is the higher SO2 content of the ILL coal included in the cost of the coal?

Michael

Hi:

Attached SiouxStudy.xls file summarizes some runs I made exploring the fuel blending at Sioux.

To summarize, at the 60/40 blend (all hours year round), the Sioux plant burns 1.2 million tons of ILL coal, but the price of generation is still well below the Staff FPC value, so sales are mostly unhindered and the units can run as much as the Staff model indicates. Tim Finnell said their model runs the two Sioux units approx 400,000mwhs less than the Staff model did. A question is whether that much ILL coal is available. John told me yesterday that AmerenUE had about 420,000 tons under contract and would purchase about 200,000 tons more (on the spot market? and at what cost?). At the 60/40 blend, year round, the plant consumes twice the planned AmerenUE ILL coal amounts (1.2 million vs .62 million).

Michael

John:

For the new runs you want, I'm reducing the sales price (i.e., the forward price curve) and don't know whether you want me to reduce the price of purchase power also (it uses the forward price curve too). I assume that you do want the purchase power price lowered, but please let me know as soon as you can.

Thanks.

Michael

AmerenUE
Annualization of Fuel And Purchased Power
Source: Income Statement, Michael Rahrer Production Cost Model
& Electric Energy Inc. (EEI) Detail - DR 431 & General ledger

Production Cost Model EEI with sales:

Fuel Expense	$ 584,997,480
Purchased Power	$ 39,456,830
Total Fuel and PP	$ 624,454,310

Production Cost Model EEI with Sales:

Fuel Cost	$ 584,997,482

Production Cost Model EEI Without Sales

Fuel Cost	$ 407,163,726
Fuel Cost - Interchange Sales	$ 177,833,756

UEC Account 555 12 mos ending 12/31/05

EEI - Demand	$ 21,205,721
EEI - Energy	$ 44,109,584

	Production Cost Model	Per Book	Adjustments Made Outside of fuel model		Adjusted Per Book			Adjustment Summary	
Fuel & PP For Load	$ 446,620,553	$ 530,308,241	$ 3,910,508	Adj S-7.2	$ 534,218,749			$ (87,598,196)	Adj S-7.1
Fuel For Interchange	$ 177,833,756	$ 278,549,115			$ 278,549,115		$ (100,715,359)		
			$ 44,109,584			Energy - EEI	$ 44,109,584	$ (56,605,775)	Adj S-8.1
	$ 624,454,309	$ 808,857,356							

EXHIBIT
PENGAD 800-631-6989
2 Rahrer
1-16-07 sP

Interchange Sales

Production Cost Model - Interchange sales	$	542,629,830
Per Book Interchange sales	$	497,783,698
Staff Adjustment S-5.1	$	44,846,132

Exhibit No.:	
Issues:	Production Cost Model
Witness:	Timothy D. Finnell
Sponsoring Party:	Union Electric Company
Type of Exhibit:	Direct Testimony
Case No.:	ER-2007-0002
Date Testimony Prepared:	June 29, 2006

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2007-0002

DIRECT TESTIMONY

OF

TIMOTHY D. FINNELL

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AmerenUE

St. Louis, Missouri
July, 2006

EXHIBIT
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DIRECT TESTIMONY

OF

TIMOTHY D. FINNELL

CASE NO. ER-2007-0002

I. INTRODUCTION

Q. Please state your name and business address.

A. Timothy D. Finnell, Ameren Services Company ("Ameren Services"), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

Q. What is your position with Ameren Services?

A. I am a Supervising Engineer in the Corporate Planning Function of Ameren Services. Ameren Services provides corporate, administrative and technical support for Ameren Corporation and its affiliates.

Q. Please describe your educational background and work experience, and the duties of your position.

A. I received my Bachelor of Science Degree in Industrial Engineering from the University of Missouri-Columbia in May 1973. I received my Master of Science Degree in Engineering Management from the University of Missouri-Rolla in May 1978.. I am a Registered Professional Engineer in the State of Missouri. My duties include developing fuel budgets, reviewing and updating economic dispatch parameters for the generating units owned by Ameren Corporation subsidiaries, including Union Electric Company, d/b/a AmerenUE ("AmerenUE"), providing power plant project justification studies, and performing other special studies.

I joined the Operations Analysis group in 1978 as an engineer. In that capacity, I was responsible for updating the computer code of the System Simulation Program, which was the Union Electric Company ("UE") production costing model. I also prepared the UE fuel budget, performed economic studies for power plant projects, and prepared production cost modeling studies for the UE rate cases since 1978. I was promoted to Supervising Engineer of the Operations Analysis work group in 1985.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to explain how I normalized fuel costs, the variable component of purchased power costs and off-system sales revenues for this case. The fuel costs include nuclear, coal, oil, and natural gas costs associated with producing electricity from the AmerenUE generation fleet. The normalized costs and revenues which I calculated are utilized by AmerenUE witness Gary S. Weiss in developing the revenue requirement for this case as discussed in Mr. Weiss' direct testimony. A summary of my testimony appears in Attachment A.

Q. Please briefly summarize your testimony and conclusions.

A. The normalized system fuel costs, variable purchased power costs, and off-system sales revenues were calculated using the PROSYM production cost model. The normalized fuel costs, variable purchased power costs and off-system sales revenues calculated for this case are approximately $599 million, $26 million, and $311 million, respectively.

III. PRODUCTION COST MODELING - GENERAL

Q. What is a production cost model?

A. A production cost model is a computer application used to simulate an electric utility's generation system and load obligations. One of the primary uses of a production cost model is to develop production cost estimates used for planning and decision-making.

Q. Is the PROSYM model used by AmerenUE a commonly used production cost model?

A. Yes. PROSYM is a product of Global Energy Decisions ("GED"). The PROSYM production cost model is widely used either directly or indirectly by utilities around the world. By indirectly I mean that the PROSYM logic is used to run numerous other products that GED offers.

Q. How long has AmerenUE been using PROSYM?

A. UE began using PROSYM in 1985 and Ameren Services has continued to use it since Ameren Services was formed.

Q. How is PROSYM used at Ameren Services?

A. PROSYM is operated and maintained by the Operations Analysis Group. Some of the most common uses of PROSYM are: preparation of monthly and annual fuel burn projections; support for emissions planning; evaluation of major unit overhaul schedules; evaluation of power plant projects; and support for regulatory requirements such as PURPA filings and rate cases.

Q. What are the major inputs to the PROSYM model run used for calculating the fuel costs, variable purchased power costs and off-system sales revenues?

A. The major inputs include: normalized hourly loads, unit availabilities, fuel prices, unit operating characteristics, hourly energy market prices, and system requirements.

Q. Do different production cost models produce similar results?

A. Most models should have similar logic for optimizing generation costs and should produce similar results all else being equal. However, some models have a higher level of accuracy because, for example, they are able to perform a more detailed optimization for systems with run of river plants, stored hydroelectric plants, pumped storage plants, fuel allocation requirements, and reserve requirements. The dispatch of hydroelectric and pumped storage plants is an important part of the AmerenUE generation cost optimization and requires a model that is able to optimize those types of plants. PROSYM is such a model. Our experience with PROSYM indicates that it does a superior job of simulating complex generating systems such as the AmerenUE system.

Q. Are there other key issues relating to production cost modeling?

A. Yes. Another very important issue is how well the model is calibrated to actual results. Model calibration is done by using inputs that reflect actual (i.e. not normalized) data for a specific time period and comparing the simulated results produced by the model to the actual generation performance and costs for that time period. Production cost model outputs that should be compared to actual data to properly calibrate the model include: unit generation totals for the period being evaluated; hourly unit loadings; unit heat rates; number of hot and cold starts; and off-system sales volumes and prices.

Q. How well is the PROSYM model calibrated?

A. The PROSYM model is very well calibrated as demonstrated by the results of a calibration conducted under my supervision, which compared actual 2005 generation to model results. For example, the model results predicted that the generating output from the AmerenUE system would be 45,189,737 megawatt hours ("MWh"), which was within 0.5% of the actual results. Based upon my experience, these results demonstrate the high level of accuracy of the model. Detailed results of the calibration are shown in Schedule TDF-1.

Q. What must one do to achieve a high level of calibration in modeling a utility's generation?

A. One must look carefully at the model inputs that could affect the results. For example, if the model's results for generation output are too low when compared to actual values, there are several items that would need to be reviewed. These items include the analysis of whether (1) the dispatch price is too high; (2) the unit availability factor is too low; (3) the minimum load is too low; (4) the unit start-up costs are incorrect; (5) the minimum up and down times are incorrect; and (6) the off-system sales market is incorrectly modeled.

Q. What are the implications of using a less well calibrated model to support adjustments in rate cases?

A. A poorly calibrated model will inevitably lead to inaccurate adjustments to test year values.

IV. PRODUCTION COST MODEL INPUTS

Q. What type of load data is required by PROSYM?

A. PROSYM utilizes monthly energy with a historic hourly load pattern. The monthly energy reflects AmerenUE's kilowatt hour ("kWh") sales and line losses. AmerenUE's weather normalized sales are developed in the direct testimony of AmerenUE witness Richard A. Voytas. Line loss factors are provided in Schedule TDF-2. For this case, the historic load pattern applied to normalized monthly energy is based on modified 2005 data.

Q. Why was the 2005 hourly load data modified?

A. The 2005 hourly load data was modified for two major changes to the AmerenUE customer mix: (1) the transfer of the AmerenUE Metro East (Illinois) load from AmerenUE to AmerenCIPS on May 2, 2005; and (2) the addition of Noranda Aluminum, Inc. ("Noranda") as AmerenUE's largest customer on June 1, 2005. Thus, adjustments were made to the hourly loads to eliminate the Metro East load for the entire year and to add the Noranda load for the entire year.

Q. What operational data is used by PROSYM?

A. Operational data reflects the characteristics of the generating units used to supply the energy for native load customers and to make off-system sales. The major operational data includes: the unit input/output curve, which calculates the fuel input required for a given level of generator output; the generator minimum load, which is the lowest load level at which a unit normally operates; the maximum load, which is the highest level at which the unit normally operates; and fuel blending. Schedule TDF-3 lists the operational data used for this case.

Q. What availability data is used by PROSYM?

A. The availability data are categorized as planned outages, unplanned outages and deratings. The planned outages are the major unit outages that occur at scheduled intervals. The length of the scheduled outage depends on the type of work being performed. The outage intervals vary due to factors such as: type of unit; unplanned outage rates during the maintenance interval; and plant modification plans. A normalized planned outage schedule was used for this case, as reflected in Schedule TDF-4. For all of the units, except the Callaway Nuclear Plant, the length of the planned outages was based on a 6-year average of actual planned outages that occurred between 2000 and 2005. The Callaway planned outage length used in PROSYM was two-thirds of the 2005 scheduled outage. The Callaway outage length is consistent with the normalized Callaway refueling assumptions used by Mr. Weiss to calculate the revenue requirement for this case. In addition to the length of the outage, the time period when the outage occurs is also important. Planned outages are typically scheduled during the Spring and Fall months when system loads are low. Another important factor considered in scheduling planned outages is the market price of power. The planned outage schedule used in modeling AmerenUE's generation with the PROSYM model is shown in Schedule TDF-5.

Unplanned outages are short outages when a unit is completely off-line. These outages typically last from one to seven days and occur between the planned outages. The unplanned outages occur due to operational problems that must be corrected for the unit to operate properly. Several examples of causes of unplanned outages are: tube leaks, boiler and economizer cleanings, and turbine /generator repairs. The unplanned outage rate for this case is based on a 6-year average of unplanned outages that occurred between 2000 and 2005, and is reflected in Schedule TDF-6.

Deratings occur when a generating unit cannot reach its maximum output due to operational problems. The magnitude of the derating varies based on the operating issues involved and can result in reduced outputs ranging from 2% to 50% of the maximum unit rating. Several examples of causes of derating include: coal mill outages, boiler feed pump outages, exceeding opacity limits due to precipitator performance problems. The derating rate used in this case is based on a 6-year average of deratings that occurred between 2000 and 2005, and is reflected in Schedule TDF-7.

Q. What availability was assigned to Taum Sauk?

A. For purposes of this model, I presumed that AmerenUE's Taum Sauk plant was available as a generation resource for the entire year.

Q. What fuel cost data was used in PROSYM?

A. AmerenUE units consume four types of fuel: nuclear, coal, gas, and oil.

The nuclear fuel costs are based on the average nuclear fuel cost associated with Callaway Refueling Number 14, the refueling outage which was completed in November of 2005. The coal costs reflect coal and transportation costs based upon prices as of January 2007. These coal and transportation costs are discussed in detail in the direct testimony of AmerenUE witness Robert K. Neff.

The gas and oil prices are based on the average monthly dispatch price for the three major gas pipelines supplying gas to AmerenUE's combustion turbine generation ("CTG") fleet during the period January 2003 to December 2005, modified to eliminate the impact of the highly unusual 2005 hurricane season. The modification for the impact of the

2005 hurricanes reduces oil and gas dispatch fuel prices for the period September to December 2005. The impact of the 2005 hurricanes and coal conservation on energy prices, electric markets and gas markets is described in detail in the direct testimony of AmerenUE witness Shawn E. Schukar.

Q. What off-system purchase and sales data was used in PROSYM?

A. Off-system purchases are power purchases from energy sellers used to meet native load requirements. The purchases can be from long-term purchase contracts or short-term economic purchases. The only long-term power purchase contract included as an off-system purchase in PROSYM in this case is the purchase of 160 megawatts ("MW") from Arkansas Power & Light Company ("APL"). The price of the APL contract is based on the average price for the period January 2003 through December 2005. Short-term economic purchases are used to supply native load when the prices are lower than the cost of generation and the generating unit operating parameters are not violated. A violation of the generating unit operating parameters would occur when all units are operating at their minimum load and cannot reduce their output any further. In that case, short-term economic purchases are not made even when they are at lower costs than the cost of operating the AmerenUE generating units. The price of short-term economic purchases is based on hourly market prices. The hourly market prices are based on the average market prices for the period January 2003 through December 2005 modified for the impact of the 2005 hurricane season and coal conservation. The volume of short-term economic purchases was assumed to be unlimited.

No contract off-system sales were modeled in PROSYM; however, there were short-term economic off-system sales modeled in PROSYM. Short-term economic off-system sales occur when the cost of excess generation is below the market price for power. Excess generation is the generation that is not used to supply the native load customers. The market price used to determine for short-term economic sales is the same price as for short-term economic purchases, as previously described. The volume of short-term economic sales has limits based on the time of day and day of the week. The short-term economic sales limits are based on historical sales volumes for on-peak and off-peak sales.

Q. What system requirements are used in PROSYM?

A. The system requirements are the non-plant specific inputs that impact the dispatch of the generating units. The two major system requirements are the operation of a stand-alone AmerenUE generation system (i.e. without a Joint Dispatch Agreement, as addressed in the direct testimony of AmerenUE witness Warner L. Baxter) and the required operating reserves. The stand-alone system is a PROSYM simulation in which AmerenUE's generation is interconnected to the Midwest Independent Transmission System Operator, Inc. ("MISO") market and other bilateral markets, but is not directly interconnected to any Ameren affiliates, such as AmerenCIPS, AmerenCILCO, or AmerenIP. The operating reserves are comprised of spinning reserves and non-spinning reserves. The spinning reserves comprise the AmerenUE generating units that are on-line and not fully loaded. Thus, spinning reserves may be thought of as stranded MWs that are not used for supplying native load or for making off-system sales. The AmerenUE spinning reserve value used in PROSYM was 101 MW. The spinning reserve units are used for instantaneous response to changes in customer demand. The non-spinning reserve value used in PROSYM was 101 MW. The non-spinning reserve can be either spinning or quick-start generation that can be made available within 10 minutes. The non-spinning reserves are used to respond when an AmerenUE generating unit or a regional generating unit trips off-line. AmerenUE's quick start units include: Osage, Taum Sauk, Fairground CTG, Mexico CTG, Moberly CTG, Moreau CTG, and Meramec CTG #1.

Q. What are the normalized system fuel costs, variable purchased power costs and off-system sales revenues calculated by the PROSYM model?

A. The normalized fuel costs, variable purchased power costs and off-system sales revenues calculated by the PROSYM model are $599 million, $26 million, and $311 million, respectively. These results are utilized by Mr. Weiss in developing the revenue requirement for AmerenUE.

Q. Does this conclude your direct testimony?

A. Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area.	)))))	Case No. ER-2007-0002

AFFIDAVIT OF TIMOTHY D. FINNELL

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Timothy D. Finnell, being first duly sworn on his oath, states:

1. My name is Timothy D. Finnell. I work in the City of St. Louis, Missouri, and I am employed by Ameren Services Company as a Supervising Engineer.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a AmerenUE consisting of 11 pages, Attachment A and Schedules TDF-1 through TDF-7, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Timothy D. Finnell
Timothy D. Finnell

Subscribed and sworn to before me this 29th day of June, 2006.

Carolyn J. Woodstock
Notary Public

My commission expires: May 19, 2008

CAROLYN J. WOODSTOCK
Notary Public - Notary Seal
STATE OF MISSOURI
Franklin County
My Commission Expires: May 19, 2008

EXECUTIVE SUMMARY

Timothy D. Finnell

Supervising Engineer of the Operations Analysis Work Group / Pricing and Analysis Department/Corporate Planning Function

* * * * * * * * *

The purpose of my testimony is to explain the production cost model used to normalize fuel costs, the variable component of purchased power costs and off-system sales revenues for this case. A production cost model is a computer application used to simulate an electric utility's generation system and load obligations. One of the primary uses of a production cost model is to develop production cost estimates used for planning and decision-making. The program I used for my analysis is PROSYM. AmerenUE's experience with this program indicates that it does a superior job of simulating complex generating systems such as AmerenUE's system.

PROSYM utilizes monthly energy with a historic hourly load pattern. The monthly energy reflects AmerenUE kilowatt hour ("kWh") sales and line losses. The 2005 hourly load data was modified for the transfer of the AmerenUE Metro East (Illinois) load to AmerenCIPS and for the addition of Noranda Aluminum, Inc. Adjustments were made so that each change was effective for the entire year.

The fuel expenses used include the nuclear, coal, oil, and natural gas costs associated with producing electricity from the AmerenUE generation fleet. For purposes of this model, it was presumed that AmerenUE's Taum Sauk plant was available as a generation resource for the entire year. The model also considers normalized hourly loads, unit availabilities, fuel prices, unit operating characteristics, hourly energy market prices, and system requirements.

The normalized fuel costs, variable purchased power costs and off-system sales revenues calculated by the PROSYM model are $599 million, $26 million, and $311 million, respectively. These results are utilized by AmerenUE witness Gary S. Weiss in developing the revenue requirement for AmerenUE.

Calibration Production Cost Model Results - Actual vs Calibration Run
January to November 2005

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV		Total	Calibration-Actual	% Error
Callaway	Actual	818,598	787,769	699,479	773,972	864,248	757,093	852,463	853,734	436,542	-5,959	282,786		7,120,725		
	Calibration	749,100	787,500	684,000	763,600	839,200	752,600	831,000	831,800	428,900	0	271,800		6,939,500	-181,225	-2.5%
Rush	Actual	457,670	751,953	725,495	842,676	807,684	804,266	740,895	806,427	794,365	725,942	677,693		8,135,066		
	Calibration	451,400	759,600	732,100	812,700	819,800	801,400	771,000	816,400	809,300	759,800	743,400		8,276,900	141,834	1.7%
Labadie	Actual	1,631,975	1,470,946	1,705,258	1,564,050	1,628,637	1,556,681	1,629,355	1,676,701	1,444,995	1,407,515	1,307,614		17,023,727		
	Calibration	1,625,900	1,448,200	1,667,500	1,543,400	1,648,000	1,578,700	1,633,900	1,708,800	1,481,300	1,456,700	1,300,900		17,093,300	69,573	0.4%
Sioux	Actual	591,982	497,073	318,096	315,218	625,625	545,552	597,925	672,280	631,629	651,728	563,525		6,010,633		
	Calibration	630,600	494,200	316,000	325,100	576,900	552,500	592,400	632,700	607,800	616,400	531,600		5,876,200	-134,433	-2.2%
Meramec	Actual	566,937	542,604	461,044	346,123	359,393	511,984	551,013	537,237	467,781	472,458	434,895		5,251,469		
	Calibration	582,700	536,900	460,500	323,900	343,800	488,200	518,900	527,700	487,900	475,700	426,700		5,172,900	-78,569	-1.5%
Taum	Actual	44,184	28,497	27,972	46,849	53,243	61,540	70,837	69,817	66,849	57,156	37,015		563,959		
	Calibration	61,600	44,400	41,800	56,100	38,800	44,100	47,900	34,200	49,900	57,900	52,900		549,600	-14,359	-2.5%
Osage	Actual	147,906	127,700	38,729	17,658	21,364	103,292	23,172	25,206	27,806	8,137	413		541,383		
	Calibration	148,600	126,200	41,000	17,000	21,700	101,500	24,000	26,600	26,000	8,300	5,200		546,100	4,717	0.9%
Keokuk	Actual	73,392	74,262	90,086	79,007	95,589	93,390	84,911	54,144	54,146	93,155	71,528		863,617		
	Calibration	74,000	73,900	90,000	78,300	90,800	93,700	84,800	54,400	56,400	90,200	74,300		860,800	-2,817	-0.3%
Ctg UE	Actual	1,638	-804	-686	11,382	10,107	85,010	130,763	139,633	55,964	26,498	7,595		467,040		
	Calibration	1,200	0	0	0	1,200	81,300	127,800	81,500	75,700	38,500	13,500		420,700	-46,340	-9.9%
TS PP	Actual	-61,856	-39,944	-38,321	-66,116	-72,030	-85,775	-98,808	-97,896	-93,530	-82,149	-51,821		-788,246		
	Calibration	-86,800	-62,800	-57,200	-79,700	-53,700	-61,200	-67,100	-76,200	-69,100	-81,900	-73,400		-769,100	19,146	-2.4%
UE	Actual	4,272,426	4,239,996	4,027,152	3,930,819	4,393,860	4,433,033	4,582,533	4,737,283	3,886,547	3,354,481	3,331,243		45,189,373		
Less TS Pump	Calibration	4,238,300	4,208,100	3,975,700	3,840,400	4,326,500	4,432,800	4,564,600	4,657,900	3,954,100	3,421,600	3,346,900		44,966,900	-222,473	-0.5%
JDA Off System	Actual	512,969	920,115	773,986	1,332,200	1,584,727	789,568	431,426	664,349	428,470	393,387	527,820		8,359,017		
Sales	Calibration	599,100	954,900	795,100	1,076,600	1,261,300	499,200	436,400	451,800	496,900	481,000	500,900		7,553,200	-805,817	-9.6%

Revised: March 1, 2006

TO: Bill Warwick

FROM: Dan Buss

RE: Revised UE-MO 2003 Loss Study Loss Multipliers

Please disregard the February 16, 2006 memo with its loss values. We discovered a minor error in the LV Distribution and Secondary loss multipliers.

We have completed the AmerenUE-Missouri loss study with the above mentioned revisions. Results are shown in the tables below. The study year was 2003 for the UE-MO service territory. The study will be documented in a report which is forth coming, but we thought you would want to have the results now.

The 2003 UE-MO Demand Loss Multipliers are:

Voltage Connection Point	Demand Loss Multipliers		
	By Voltage Level	To Generation	To Transmission
GSU	1.0030	1.0030	Not Applicable
Transmission	1.0150	1.0180	Not Applicable
HV Distribution	1.0156	1.0338	1.0156
LV Distribution	1.0287	1.0635	1.0447
Secondary	1.0360	1.1018	1.0823

The 2003 UE-MO Energy Loss Multipliers are:

Voltage Connection Point	Energy Loss Multipliers		
	By Voltage Level	To Generation	To Transmission
GSU	1.0046	1.0046	Not Applicable
Transmission	1.0101	1.0147	Not Applicable
HV Distribution	1.0123	1.0271	1.0123
LV Distribution	1.0215	1.0492	1.0340
Secondary	1.0378	1.0888	1.0731

Please see attached drawing illustrating the voltage classifications. Note that GSU is Generator Step-up Unit. This is what connects the generator terminals to the transmission system. A transmission voltage connection point would be a connection to the electric utility system for voltages from 138 kV through 345 kV system. The HV (High Voltage) Distribution system connection would be for voltage levels from 34.5 kV through 69 kV. The LV (Low Voltage) Distribution System would connect to the electric utility system for voltages from 2.4 kV through 25 kV. A secondary connection to the utility system would be for voltages less than or equal to 480 V.

The new Demand Loss Multipliers do not vary significantly from the previous set of UE multipliers. The new Energy Loss Multipliers to the transmission level are lower. They are noticeably lower at the HV and LV Distribution levels from the previous set of UE multipliers. Ameren has been installing more energy efficient equipment since the time of the last study. The other significant reason is that this 2003 loss study has significantly more detail in than the previous loss study.

The GSU level was itemized in these numbers due to MISO rules. MISO looks at what the generator injects into the transmission system at the high voltage connection to the GSU.

Attachment

Cc: Gary Brownfield
Hande Berk
Rick Voytas
Bob Willen

Production Cost Model - Unit Operating Data

Unit Name	Minimum - Net	Maximum -Net #1	Primary Fuel Type	Input / Output Curve #2 A	B	C	EDF
Callaway	800	1,190	Nuclear	-	9.984	-	1.00
Labadie 1	230	597	100% PRB Coal	0.00338	6.867	684.6	1.03
Labadie 2	230	596	100% PRB Coal	0.00338	6.867	684.6	1.03
Labadie 3	180	613	100% PRB Coal	0.00374	6.158	878.7	1.03
Labadie 4	338	611	100% PRB Coal	0.00374	6.158	878.7	1.03
Rush 1	234	593	100% PRB Coal	0.00161	7.875	814.4	0.99
Rush 2	234	592	100% PRB Coal	0.00161	7.875	814.4	0.99
Sioux 1	330	500	83%PRB/17% ILL Coal	0.00010	9.009	398.3	1.00
Sioux 2	330	503	83%PRB/17% ILL Coal	0.00010	9.009	398.3	1.00
Meramec 1	45	123	100% PRB Coal	0.01378	7.310	194.9	1.04
Meramec 2	48	125	100% PRB Coal	0.01378	7.310	194.9	1.04
Meramec 3	185	273	100% PRB Coal	0.00471	7.174	249.3	1.18
Meramec 4	169	356	100% PRB Coal	0.00164	9.458	173.4	1.07
Audrain CT 1	45	75	Gas	0.00010	8.590	245.9	1.00
Audrain CT 2	45	75	Gas	0.00010	8.590	245.9	1.00
Audrain CT 3	45	75	Gas	0.00010	8.590	245.9	1.00
Audrain CT 4	45	75	Gas	0.00010	8.590	245.9	1.00
Audrain CT 5	45	75	Gas	0.00010	8.590	245.9	1.00
Audrain CT 6	45	75	Gas	0.00010	8.590	245.9	1.00
Audrain CT 7	45	75	Gas	0.00010	8.590	245.9	1.00
Audrain CT 8	45	75	Gas	0.00010	8.590	245.9	1.00
Fairgrounds CT	20	55	Oil	0.00143	7.798	177.3	0.98
Goose Creek CT 1	45	75	Gas	0.00010	8.590	245.9	1.00
Goose Creek CT 2	45	75	Gas	0.00010	8.590	245.9	1.00
Goose Creek CT 3	45	75	Gas	0.00010	8.590	245.9	1.00
Goose Creek CT 4	45	75	Gas	0.00010	8.590	245.9	1.00
Goose Creek CT 5	45	75	Gas	0.00010	8.590	245.9	1.00
Goose Creek CT 6	45	75	Gas	0.00010	8.590	245.9	1.00
Howard Bend CT	20	43	Oil	0.00261	9.654	118.6	0.95
Kinmundy CT 1	80	116	Gas	0.00923	6.381	423.2	1.07
Kinmundy CT 2	80	116	Gas	0.00923	6.381	423.2	1.07
Kirksville CT	5	13	Gas	0.00261	9.654	118.6	1.20
Meramec CT 1	20	55	Oil	0.00143	7.798	177.3	0.96
Meramec CT 2	30	53	Gas	0.00261	9.654	118.6	1.00
Mexico CT	20	55	Oil	0.00143	7.798	177.3	1.00
Moberly CT	20	55	Oil	0.00143	7.798	177.3	1.00
Moreau CT	20	55	Oil	0.00143	7.798	177.3	1.00
Peno Creek CT 1	22	48	Gas	0.00010	8.467	94.1	1.00
Peno Creek CT 2	22	48	Gas	0.00010	8.467	94.1	1.00
Peno Creek CT 3	22	48	Gas	0.00010	8.467	94.1	1.00
Peno Creek CT 4	22	48	Gas	0.00010	8.467	94.1	1.00
Pinkneyville CT 1	23	44	Gas	0.01190	6.662	111.0	1.00
Pinkneyville CT 2	23	44	Gas	0.01190	6.662	111.0	1.00
Pinkneyville CT 3	23	44	Gas	0.01190	6.662	111.0	1.00
Pinkneyville CT 4	23	44	Gas	0.01190	6.662	111.0	1.00
Pinkneyville CT 5	23	36	Gas	0.00100	8.603	134.9	1.05
Pinkneyville CT 6	23	36	Gas	0.00100	8.603	134.9	1.05
Pinkneyville CT 7	23	36	Gas	0.00100	8.603	134.9	1.05
Pinkneyville CT 8	23	36	Gas	0.00100	8.603	134.9	1.05
Raccoon Creek CT 1	45	75	Gas	0.00010	8.882	225.7	1.00
Raccoon Creek CT 2	45	75	Gas	0.00010	8.882	225.7	1.00
Raccoon Creek CT 3	45	75	Gas	0.00010	8.882	225.7	1.00
Raccoon Creek CT 4	45	75	Gas	0.00010	8.882	225.7	1.00
Venice CT 1	10	26	Oil	0.00457	9.738	132.1	0.95
Venice CT 2	20	49	Gas	0.00010	8.467	94.1	1.00
Venice CT 3	135	169	Gas	0.00603	6.616	473.0	1.00
Venice CT 4	135	169	Gas	0.00603	6.616	473.0	1.00
Venice CT 5	80	117	Gas	0.00923	6.381	432.3	1.07
Viaduct CTG	10	26	Gas	0.00457	9.738	132.1	1.20
Osage		226	Pond Hydro				
Keokuk		134	Run of River Hydro				
Taum Sauk 1		215	Pumped Storage				
Taum Sauk 2		215	Pumped Storage				

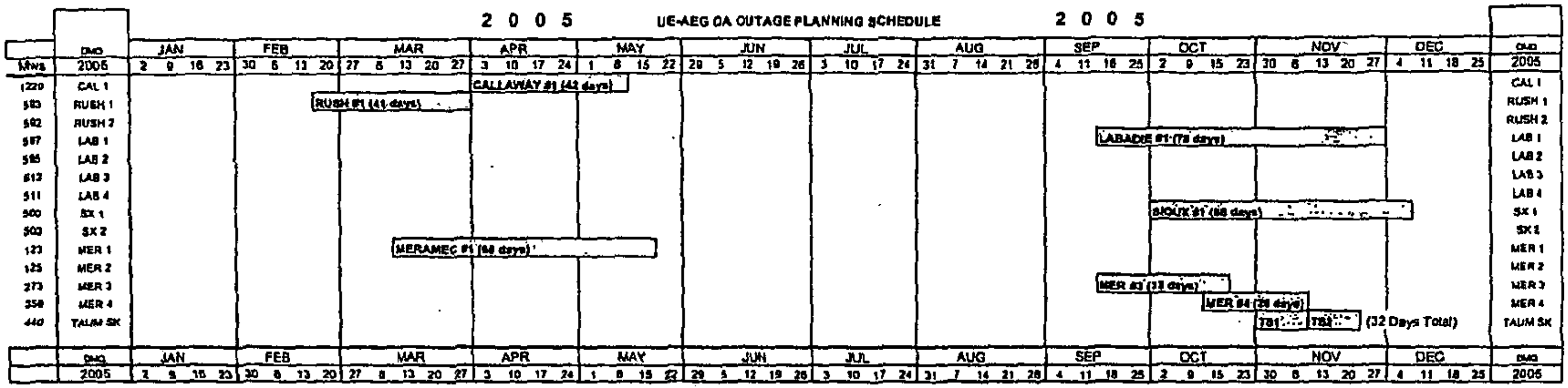
Notes:
1 July Rating shown in this table.
2 Input Output equation: mmbtu = (Pnet^2 x A + Pnet x B + C) x EDF, where Pnet = Net power level

Planned Outage Data

Sum of Eq Hrs		Total
Unit	Year	Planned Outages
Callaway 1	2000	
	2001	1,073
	2002	794
	2003	-
	2004	1,542
	2005	1,526
Callaway 1 Total		4,935
Labadie 1	2000	1,301
	2001	-
	2002	1,808
	2003	178
	2004	-
	2005	-
Labadie 1 Total		3,287
Labadie 2	2000	-
	2001	1,393
	2002	-
	2003	-
	2004	1,263
	2005	-
Labadie 2 Total		2,658
Labadie 3	2000	-
	2001	-
	2002	-
	2003	1,473
	2004	-
	2005	-
Labadie 3 Total		1,473
Labadie 4	2000	1,147
	2001	-
	2002	1,564
	2003	1,118
	2004	-
	2005	-
Labadie 4 Total		3,829
Meramec 1	2000	2,266
	2001	317
	2002	-
	2003	-
	2004	1,976
	2005	-
Meramec 1 Total		4,559
Meramec 2	2000	2,275
	2001	891
	2002	-
	2003	-
	2004	2,048
	2005	-
Meramec 2 Total		5,214
Meramec 3	2000	2,257
	2001	-
	2002	457
	2003	1,597
	2004	135
	2005	369
Meramec 3 Total		4,815
Meramec 4	2000	-
	2001	1,456
	2002	561
	2003	-
	2004	-
	2005	1,683
Meramec 4 Total		3,700

Planned Outage Data

Sum of Eq Hrs		Total
Unit	Year	Planned Outages
Rush Island 1	2000	-
	2001	1,474
	2002	-
	2003	-
	2004	-
	2005	-
Rush Island 1 Total		1,474
Rush Island 2	2000	1,092
	2001	-
	2002	1,502
	2003	1,152
	2004	661
	2005	-
Rush Island 2 Total		4,407
Sioux 1	2000	-
	2001	1,753
	2002	-
	2003	1,440
	2004	-
	2005	1,570
Sioux 1 Total		4,763
Sioux 2	2000	1,545
	2001	-
	2002	1,380
	2003	105
	2004	2,029
	2005	-
Sioux 2 Total		5,059



Schedule TDF-5-1

Unplanned Outage Data		
Sum of Eq Hrs		
Unit	Year	
Callaway 1	2000	0.2%
	2001	2.8%
	2002	6.7%
	2003	4.1%
	2004	6.8%
	2005	4.6%
Callaway 1 Total		4.0%
Labadie 1	2000	9.8%
	2001	3.7%
	2002	10.8%
	2003	4.8%
	2004	5.6%
	2005	3.3%
Labadie 1 Total		5.8%
Labadie 2	2000	8.8%
	2001	8.4%
	2002	3.9%
	2003	5.7%
	2004	10.3%
	2005	6.0%
Labadie 2 Total		6.9%
Labadie 3	2000	4.7%
	2001	7.2%
	2002	6.9%
	2003	13.0%
	2004	4.1%
	2005	3.1%
Labadie 3 Total		6.1%
Labadie 4	2000	7.8%
	2001	7.3%
	2002	49.2%
	2003	5.0%
	2004	5.6%
	2005	3.3%
Labadie 4 Total		11.2%
Meramec 1	2000	14.4%
	2001	17.9%
	2002	5.2%
	2003	3.8%
	2004	6.4%
	2005	1.3%
Meramec 1 Total		7.4%
Meramec 2	2000	4.8%
	2001	6.8%
	2002	3.1%
	2003	6.1%
	2004	3.0%
	2005	1.6%
Meramec 2 Total		4.1%
Meramec 3	2000	34.3%
	2001	18.0%
	2002	13.0%
	2003	13.0%
	2004	8.0%
	2005	6.7%
Meramec 3 Total		13.8%
Meramec 4	2000	8.9%
	2001	4.3%
	2002	11.5%
	2003	12.7%
	2004	4.1%
	2005	9.6%
Meramec 4 Total		8.7%
Rush Island 1	2000	7.3%
	2001	24.2%
	2002	12.5%
	2003	7.2%
	2004	23.3%
	2005	13.3%

Unplanned Outage Data		
Sum of Eq Hrs		
Unit	Year	
Rush Island 1 Total		14.1%
Rush Island 2	2000	3.6%
	2001	18.4%
	2002	14.5%
	2003	7.4%
	2004	14.0%
	2005	2.2%
Rush Island 2 Total		10.0%
Sioux 1	2000	15.7%
	2001	23.0%
	2002	8.7%
	2003	13.1%
	2004	8.0%
	2005	3.8%
Sioux 1 Total		11.7%
Sioux 2	2000	15.7%
	2001	4.8%
	2002	3.6%
	2003	3.8%
	2004	5.5%
	2005	2.7%
Sioux 2 Total		5.6%

Derate Outage Data		
Sum of Eq Hrs		Incl minis
Unit	Year	UnFul Rt
Callaway 1	2000	0.2%
	2001	2.8%
	2002	6.7%
	2003	4.1%
	2004	6.8%
	2005	4.6%
Callaway 1 Total		4.0%
Labadie 1	2000	9.8%
	2001	3.7%
	2002	10.8%
	2003	4.8%
	2004	5.6%
	2005	3.3%
Labadie 1 Total		5.8%
Labadie 2	2000	8.8%
	2001	8.4%
	2002	3.9%
	2003	5.7%
	2004	10.3%
	2005	6.0%
Labadie 2 Total		6.9%
Labadie 3	2000	4.7%
	2001	7.2%
	2002	6.9%
	2003	13.0%
	2004	4.1%
	2005	3.1%
Labadie 3 Total		6.1%
Labadie 4	2000	7.8%
	2001	7.3%
	2002	49.2%
	2003	5.0%
	2004	5.6%
	2005	3.3%
Labadie 4 Total		11.2%
Meramec 1	2000	14.4%
	2001	17.9%
	2002	5.2%
	2003	3.8%
	2004	6.4%
	2005	1.3%
Meramec 1 Total		7.4%
Meramec 2	2000	4.8%
	2001	6.8%
	2002	3.1%
	2003	6.1%
	2004	3.0%
	2005	1.6%
Meramec 2 Total		4.1%
Meramec 3	2000	34.3%
	2001	18.0%
	2002	13.0%
	2003	13.0%
	2004	8.0%
	2005	6.7%
Meramec 3 Total		13.8%
Meramec 4	2000	8.9%
	2001	4.3%
	2002	11.5%
	2003	12.7%
	2004	4.1%
	2005	9.6%
Meramec 4 Total		8.7%
Rush Island 1	2000	7.3%
	2001	24.2%
	2002	12.5%
	2003	7.2%
	2004	23.3%
	2005	13.3%

Derate Outage Data		
Sum of Eq Hrs		incl minis
Unit	Year	UnFul Rt
Rush Island 1 Total		14.1%
Rush Island 2	2000	3.6%
	2001	18.4%
	2002	14.5%
	2003	7.4%
	2004	14.0%
	2005	2.2%
Rush Island 2 Total		10.0%
Sioux 1	2000	15.7%
	2001	23.0%
	2002	8.7%
	2003	13.1%
	2004	8.0%
	2005	3.8%
Sioux 1 Total		11.7%
Sioux 2	2000	15.7%
	2001	4.8%
	2002	3.6%
	2003	3.8%
	2004	5.5%
	2005	2.7%
Sioux 2 Total		5.6%

Ameren MPSC 0140

TITLE: Ameren Benchmark Run
Original
Study Start: 01-01-2005
Study Stop: 12-31-2005

RealTime

rDate: 12-12-2006
rTime: 00:08:55

Resource	Cap Fact	Generation	Total Cost	$/MWH	Heat Rate	--Starts--- Cold	Hot	-Hours Out- Full	Part	Fuel	Quantity	Fuel Cost
U:AUDRAIN CT1	0.000	52	4.40	84.00	12144	0	0	402	0	P:GAS TRKL	642	4.4
U:AUDRAIN CT2	0.000	50	4.13	83.30	12036	0	0	402	0	P:GAS TRKL	603	4.1
U:AUDRAIN CT3	0.000	47	3.98	84.98	12275	0	0	481	0	P:GAS TRKL	580	4.0
U:AUDRAIN CT4	0.000	43	3.64	84.39	12179	0	0	382	0	P:GAS TRKL	531	3.6
U:AUDRAIN CT5	0.000	39	3.31	84.18	12136	0	0	434	0	P:GAS TRKL	483	3.3
U:AUDRAIN CT6	0.000	50	4.39	87.58	12382	0	0	432	0	P:GAS TRKL	626	4.4
U:AUDRAIN CT7	0.000	29	2.48	86.58	12436	0	0	446	0	P:GAS TRKL	362	2.5
U:AUDRAIN CT8	0.000	0	0.00	0.00	0	0	0	459	0	P:GAS TRKL	0	0.0
U:CALLAWAY 1	0.879	8,877,162	40,406.40	4.55	9985	1	0	1032	0	P:NUCLEAR	88,638,580	40,406.4
U:FAIRGROUNDS GT	0.000	10	1.07	111.20	11103	0	0	491	0	P:OIL MO	119	1.1
U:GOOSE CREEK CT1	0.003	1,737	140.73	81.02	12241	5	5	392	0	P:GAS PEPL	21,660	140.7
U:GOOSE CREEK CT2	0.003	1,660	133.41	80.38	12217	4	4	340	0	P:GAS PEPL	20,656	133.4
U:GOOSE CREEK CT3	0.002	1,382	113.00	81.76	12249	4	4	436	0	P:GAS PEPL	17,263	113.0
U:GOOSE CREEK CT4	0.002	1,110	89.02	80.21	12233	3	3	425	0	P:GAS PEPL	13,852	89.0
U:GOOSE CREEK CT5	0.001	860	68.11	79.17	12185	3	1	498	0	P:GAS PEPL	10,754	68.1
U:GOOSE CREEK CT6	0.001	797	64.28	80.65	12245	3	2	451	0	P:GAS PEPL	9,992	64.3
U:HOWARD BEND CT	0.000	6	0.73	125.05	12882	0	0	541	0	P:OIL MO	81	0.7
U:KINMUNDY CT 1	0.011	11,381	853.02	74.95	12216	22	20	0	0	P:GAS NGP	140,530	853.0
U:KINMUNDY CT 2	0.010	10,319	774.57	75.06	12182	21	19	0	0	P:GAS NGP	127,116	774.6
U:KIRKSVILLE CT	0.000	5	0.79	163.29	24481	0	0	560	0	P:GAS MRT	118	0.8
U:LABADIE 1	0.670	3,503,535	43,937.98	12.54	10095	3	0	2004	1028	I:OIL MO	7,931	73.3
										I:LAB COAL	7,931	9.8
										P:LAB COAL	35,366,820	43,854.9
										Total		43,938.0
U:LABADIE 2	0.834	4,344,885	54,570.94	12.56	10101	6	0	189	1590	I:OIL MO	14,119	130.7
										I:LAB COAL	14,119	17.5
										P:LAB COAL	43,889,280	54,422.7
										Total		54,570.9
U:LABADIE 3	0.852	4,575,892	56,753.87	12.40	9971	7	0	462	809	I:OIL MO	16,699	158.1
										I:LAB COAL	16,699	20.7
										P:LAB COAL	45,625,030	56,575.1
										Total		56,753.9
U:LABADIE 4	0.876	4,688,276	58,164.69	12.41	9976	7	0	322	772	I:OIL MO	15,789	148.2
										I:LAB COAL	15,789	19.6
										P:LAB COAL	46,771,700	57,996.9
										Total		58,164.7
U:MERAMEC 1	0.616	663,739	10,374.14	15.63	11328	8	0	1945	720	C:GAS MRT	48,156	319.8
										I:GAS MRT	2,601	17.2
										I:MER COAL	2,675	3.6
										P:MER COAL	7,470,980	10,033.5
										Total		10,374.1
U:MERAMEC 2	0.798	873,293	13,593.51	15.57	11292	7	0	206	1062	C:GAS MRT	63,140	417.1
										I:GAS MRT	2,171	14.5
										I:MER COAL	2,233	3.0
										P:MER COAL	9,798,120	13,158.9
										Total		13,593.5
U:MERAMEC 3	0.714	1,707,200	26,413.21	15.47	11195	15	0	1491	990	C:GAS MRT	122,511	796.9

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										I:GAS MRT	13,818	91.3
										I:MER COAL	15,645	21.0
										P:MER COAL	18,990,310	25,504.0
										Total		26,433.2
U:MERAMEC 4	0.715	2,229,828	35,216.09	15.79	11449	13	0	910	1904	C:GAS MRT	163,534	1,068.9
										I:GAS MRT	9,897	63.5
										I:MER COAL	11,854	15.9
										P:MER COAL	25,366,890	34,067.7
										Total		35,216.1
U:MERAMEC CT1	0.000	29	3.15	109.86	11375	0	0	438	0	P:OIL MO	351	3.2
U:MERAMEC CT2	0.000	179	16.15	90.29	12522	1	2	0	0	I:OIL MO	73	0.6
										P:GAS MRT	2,240	15.5
										Total		16.2
U:MEXICO CT	0.000	17	2.09	122.15	12033	0	0	522	0	P:OIL MO	233	2.1
U:MOBERLY CT	0.000	10	1.10	114.28	11330	0	0	564	0	P:OIL MO	122	1.1
U:MOREAU CT	0.000	10	1.08	112.25	11103	0	0	445	0	P:OIL MO	120	1.1
U:PENO CREEK CT1	0.032	13,476	922.11	68.42	10807	29	54	0	0	P:GAS PEPL	148,460	922.1
U:PENO CREEK CT2	0.031	13,145	899.84	68.46	10806	29	53	0	0	P:GAS PEPL	144,859	899.8
U:PENO CREEK CT3	0.031	12,900	883.28	68.47	10806	29	52	0	0	P:GAS PEPL	142,204	883.3
U:PENO CREEK CT4	0.030	12,584	862.76	68.56	10811	29	51	0	0	P:GAS PEPL	138,843	862.8
U:PINCKNEY CT1	0.060	20,878	1,349.55	64.64	10373	37	102	0	0	P:GAS NGP	217,155	1,349.6
U:PINCKNEY CT2	0.060	20,647	1,333.97	64.61	10369	37	101	0	0	P:GAS NGP	214,669	1,334.0
U:PINCKNEY CT3	0.059	20,466	1,322.27	64.61	10369	37	101	0	0	P:GAS NGP	212,789	1,322.3
U:PINCKNEY CT4	0.059	20,270	1,309.19	64.59	10366	37	100	0	0	P:GAS NGP	210,716	1,309.2
U:PINCKNEY CT5	0.003	1,101	93.61	85.06	13247	12	8	0	0	P:GAS NGP	14,967	93.6
U:PINCKNEY CT6	0.003	1,024	87.45	85.38	13237	12	8	0	0	P:GAS NGP	13,930	87.5
U:PINCKNEY CT7	0.003	952	81.74	85.88	13266	11	8	0	0	P:GAS NGP	12,985	81.7
U:PINCKNEY CT8	0.003	918	78.26	85.30	13163	11	7	0	0	P:GAS NGP	12,423	78.3
U:RACCOON CRK CT1	0.022	14,164	1,070.06	75.55	12034	23	51	419	0	P:GAS PEPL	172,401	1,070.1
U:RACCOON CRK CT2	0.019	12,705	963.60	75.84	12022	22	48	433	0	P:GAS PEPL	154,570	963.6
U:RACCOON CRK CT4	0.019	12,168	919.09	75.54	12020	22	45	500	0	P:GAS PEPL	148,142	919.1
U:RUSH ISLAND 1	0.685	3,558,198	59,486.87	16.72	10362	10	0	1714	559	I:OIL MO	30,738	296.0
										I:RUS COAL	30,738	49.3
										P:RUS COAL	36,871,290	59,141.5
										Total		59,486.9

Ameren MPSC 0140

TITLE: Ameren Benchmark Run
Original
Study Start: 01-01-2005
Study Stop: 12-31-2005

RealTime

rDate: 12-12-2006
rTime: 00:08:55

Resource	Cap Fact	Generation	Total Cost	$/MWH	Heat Rate	--Starts--- Cold	Hot	-Hours Out- Full	Part	Fuel	Quantity	Fuel Cost
U:RUSH ISLAND 2	0.818	4,243,980	70,949.18	16.72	10364	12	0	329	1086	I:OIL MO	36,688	338.0
										I:RUS COAL	36,688	58.8
										P:RUS COAL	43,985,240	70,552.3
										Total		70,949.2
U:SIOUX 1	0.638	2,792,631	46,446.64	16.63	9883	14	0	2402	583	I:OIL MO	7,915	71.6
										I:SIO COAL	52,970	88.8
										P:SIO COAL	27,600,590	46,286.2
										Total		46,446.6
U:SIOUX 2	0.857	3,777,697	62,544.41	16.56	9859	11	0	396	291	P:SIO COAL	37,295,390	62,544.4
U:VENICE CT1	0.000	0	0.00	0.00	0	0	0	631	0	P:OIL MO	0	0.0
U:VENICE CT2	0.007	2,951	220.42	74.70	10784	5	16	0	0	I:OIL MO	485	4.2
										P:GAS MRT	31,820	216.2
										Total		220.4
U:VENICE CT3	0.016	24,582	1,707.37	69.46	10636	21	19	0	0	P:GAS MRT	266,131	1,707.4
U:VENICE CT4	0.014	21,794	1,524.58	69.95	10660	20	17	0	0	P:GAS MRT	236,723	1,524.6
U:VENICE CT5	0.001	1,057	92.37	87.38	12685	4	2	0	0	P:GAS MRT	13,695	92.4
U:VIADUCT CT1	0.000	0	0.00	0.00	0	0	0	593	0	P:GAS MRT	0	0.0
H:KEOKUK		922,208	0.00	0.00								
H:OSAGE		543,105	0.00	0.00								
P:TAUM SAUK		-253,172	0.00									
B:APL FIXED-F		1,311,200	16,403.11	12.51				0				
B:APL FIXED-E		140	1.76	12.51				0				
B:PURCHASES		275,034	14,921.28	54.25				0				
S:SALES (B)		-8,832,782	-319,749.20	36.20				0				
S:SALES (O)		-186,919	-5,758.12	30.81				4320				
Total		39,872,730	302,686.87	7.59		605	903	29839	11392			596,868.0

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0	0	0	0	0	0	0	52	0	0	0	0	52
AUDRAIN CT2	0	0	0	0	0	0	0	50	0	0	0	0	50
AUDRAIN CT3	0	0	0	0	0	0	0	47	0	0	0	0	47
AUDRAIN CT4	0	0	0	0	0	0	0	43	0	0	0	0	43
AUDRAIN CT5	0	0	0	0	0	0	0	39	0	0	0	0	39
AUDRAIN CT6	0	0	0	0	0	0	0	39	0	0	0	12	50
AUDRAIN CT7	0	0	0	0	0	0	0	29	0	0	0	0	29
AUDRAIN CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1	871,968	784,896	866,760	27,888	437,854	814,072	837,000	839,232	820,784	864,523	840,960	871,224	8,877,160
FAIRGROUNDS GT	0	0	0	0	0	0	0	10	0	0	0	0	10
GOOSE CREEK CT1	127	39	0	0	27	0	594	410	0	0	0	540	1,737
GOOSE CREEK CT2	104	35	0	0	27	0	594	421	40	0	0	439	1,660
GOOSE CREEK CT3	54	34	0	0	0	0	557	263	0	0	0	473	1,382
GOOSE CREEK CT4	51	32	0	0	38	0	487	236	0	0	0	267	1,110
GOOSE CREEK CT5	60	32	0	0	0	0	513	69	0	0	0	187	860
GOOSE CREEK CT6	37	28	0	0	0	0	353	181	0	0	0	198	797
HOWARD BEND CT	0	0	0	0	0	0	0	6	0	0	0	0	6
KINMUNDY CT 1	2,694	1,481	138	0	97	1,000	2,410	1,445	378	0	95	1,642	11,381
KINMUNDY CT 2	2,205	1,425	122	0	48	987	2,339	1,151	360	0	95	1,586	10,319
KIRKSVILLE CT	0	0	0	0	0	0	0	5	0	0	0	0	5
LABADIE 1	388,963	346,856	398,990	383,739	358,652	351,366	380,449	375,063	190,993	0	0	328,466	3,503,535
LABADIE 2	385,797	354,445	378,486	365,011	380,943	334,773	329,526	351,461	348,540	375,130	374,637	366,135	4,344,884
LABADIE 3	407,133	345,814	396,370	381,668	412,521	361,224	339,936	399,374	376,145	373,220	373,499	408,989	4,575,892
LABADIE 4	392,139	376,813	426,272	416,639	397,331	383,660	388,794	356,789	377,882	380,178	399,962	391,819	4,688,278
MERAMEC 1	72,055	66,000	23,611	0	27,572	70,478	71,585	60,610	61,026	67,120	68,119	75,564	663,739
MERAMEC 2	74,522	70,173	77,619	69,612	76,937	70,096	75,360	73,145	69,301	71,106	67,827	77,594	873,293
MERAMEC 3	179,106	134,127	185,060	158,682	141,034	148,875	157,011	158,262	81,581	49,015	148,995	165,451	1,707,199
MERAMEC 4	197,636	192,528	228,580	209,537	176,489	193,820	206,012	208,230	196,442	92,385	139,348	188,821	2,229,828
MERAMEC CT1	0	0	0	0	0	0	0	29	0	0	0	0	29
MERAMEC CT2	0	12	0	0	0	0	0	75	0	0	0	92	179
MEXICO CT	0	0	0	0	0	0	0	17	0	0	0	0	17
MOBERLY CT	0	0	0	0	0	0	0	10	0	0	0	0	10
MOREAU CT	0	0	0	0	0	0	0	10	0	0	0	0	10
PENO CREEK CT1	2,176	1,293	406	0	455	1,434	3,013	2,269	527	198	172	1,533	13,476
PENO CREEK CT2	2,104	1,293	406	0	398	1,429	2,994	2,151	484	193	172	1,520	13,145
PENO CREEK CT3	2,063	1,292	406	0	340	1,426	2,970	2,077	462	182	172	1,511	12,900
PENO CREEK CT4	1,960	1,288	404	0	290	1,423	2,939	2,004	451	182	172	1,472	12,584
PINCKNEY CT1	2,971	1,648	573	108	597	3,041	4,361	3,367	914	280	360	2,659	20,878
PINCKNEY CT2	2,946	1,647	556	108	558	3,027	4,320	3,303	889	280	360	2,653	20,647
PINCKNEY CT3	2,925	1,647	551	108	527	3,009	4,291	3,248	873	278	360	2,649	20,466
PINCKNEY CT4	2,902	1,647	544	108	493	2,999	4,265	3,186	857	278	360	2,632	20,270
PINCKNEY CT5	177	200	27	0	5	0	202	109	0	0	29	351	1,101
PINCKNEY CT6	146	191	27	0	5	0	198	91	0	0	29	338	1,024

PINCKNEY CT7	120	182	23	0	4	0	198	85	0	0	29	312	952
PINCKNEY CT8	107	180	23	0	2	0	196	79	0	0	29	301	918
RACCOON CRK CT1	1,769	1,123	554	0	552	1,749	3,770	2,589	566	0	132	1,361	14,164
RACCOON CRK CT2	1,320	963	554	0	404	1,627	3,746	2,108	492	0	120	1,372	12,705
RACCOON CRK CT4	1,491	980	427	0	255	1,563	3,583	2,056	479	0	132	1,202	12,168
RUSH ISLAND 1	370,619	186,016	0	365,142	302,403	337,742	340,331	340,879	322,891	370,571	252,245	369,358	3,558,197
RUSH ISLAND 2	376,590	341,972	363,531	362,969	347,531	343,602	321,844	379,400	345,217	370,785	348,887	341,649	4,243,979
SIOUX 1	319,874	303,932	303,082	302,367	288,726	247,471	242,078	319,739	275,512	0	0	189,851	2,792,631
SIOUX 2	342,122	310,501	341,978	319,892	281,907	311,276	319,252	305,876	290,629	300,834	318,924	334,507	3,777,699
VENICE CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2	283	17	115	0	70	0	610	189	0	0	0	1,668	2,951
VENICE CT3	4,826	1,745	245	0	974	2,137	5,146	3,510	516	0	129	5,353	24,582
VENICE CT4	3,959	1,389	221	0	681	2,114	4,829	2,928	465	0	115	5,091	21,794
VENICE CT5	6	34	0	0	0	0	443	126	0	0	0	448	1,057
VIADUCT CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pumped Storage	-21,626	-19,862	-19,872	-21,566	-26,404	-28,043	-28,885	-28,798	-27,405	-11,217	1,053	-20,548	-253,172
Hydro Units													
KEOKUK	73,224	69,984	84,192	75,600	79,176	76,728	75,672	77,496	75,408	77,880	80,000	76,848	922,208
OSAGE	40,637	44,999	59,156	63,489	58,972	67,306	41,849	30,568	30,292	37,754	31,982	36,101	543,105
Purchases													
APL FIXED-F	106,720	103,360	119,040	112,800	96,800	93,280	113,760	112,800	103,200	119,040	115,200	115,200	1,311,200
APL FIXED-E	6	0	0	0	0	29	89	2	0	0	0	14	140
PURCHASES	109	1,017	871	886	41,005	18,515	76,044	89,891	28,266	8,915	4,415	5,100	275,034
Sales													
SALES (B)	-1,134,802	-857,390	-1,064,109	-937,222	-804,475	-686,402	-337,615	-452,288	-619,556	-548,084	-638,445	-752,393	-8,832,781
SALES (O)	-46,363	-20,041	-28,905	-25,564	-17,708	-14,985	-1,069	-3,554	-7,899	-428	-1,749	-18,655	-186,919
Total	3,436,014	3,158,017	3,147,035	2,632,000	3,064,110	3,523,846	4,008,944	4,034,286	3,348,002	3,000,598	2,928,923	3,590,956	39,872,731

Units	4,418,109	3,835,950	3,996,661	3,363,577	3,636,744	3,997,418	4,069,099	4,208,168	3,765,695	3,316,738	3,336,467	4,149,289	46,093,915
Coal	3,506,556	3,029,176	3,123,580	3,335,257	3,192,044	3,154,382	3,172,178	3,328,827	2,936,159	2,450,345	2,492,444	3,238,205	36,959,155
Nuclear	871,968	784,896	866,760	27,888	437,854	814,072	837,000	839,232	820,784	864,523	840,960	871,224	8,877,160
CT	39,585	21,878	6,321	432	6,846	28,964	59,921	40,109	8,752	1,871	3,063	39,860	257,601
Hydros	113,861	114,983	143,348	139,089	138,148	144,034	117,521	108,064	105,700	115,634	111,982	112,949	1,465,313
Purchases	106,835	104,377	119,911	113,686	137,805	111,824	189,893	202,694	131,466	127,955	119,615	120,314	1,586,375
Sales	-1,181,165	-877,431	-1,093,013	-962,787	-822,183	-701,387	-338,684	-455,842	-627,455	-548,512	-640,194	-771,048	-9,019,700
Storage	-21,626	-19,862	-19,872	-21,566	-26,404	-28,043	-28,885	-28,798	-27,405	-11,217	1,053	-20,548	-253,172

Ameren MPSC 0140
Ameren Benchmark Run
Original
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Fuel Expense ($1000)
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Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.40	0.00	0.00	0.00	0.00	4.40
AUDRAIN CT2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.13	0.00	0.00	0.00	0.00	4.13
AUDRAIN CT3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.98	0.00	0.00	0.00	0.00	3.98
AUDRAIN CT4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.64	0.00	0.00	0.00	0.00	3.64
AUDRAIN CT5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.31	0.00	0.00	0.00	0.00	3.31
AUDRAIN CT6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.27	0.00	0.00	0.00	1.12	4.39
AUDRAIN CT7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.48	0.00	0.00	0.00	0.00	2.48
AUDRAIN CT8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CALLAWAY 1	3,931.86	3,539.72	3,917.55	126.33	2,005.32	3,736.33	3,866.60	3,868.55	3,750.75	3,933.34	3,800.96	3,929.05	40,406.38
FAIRGROUNDS GT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	0.00	0.00	0.00	0.00	1.07
GOOSE CREEK CT1	8.75	3.16	0.00	0.00	2.06	0.00	43.95	32.28	0.00	0.00	0.00	50.54	140.73
GOOSE CREEK CT2	7.34	2.87	0.00	0.00	2.03	0.00	43.95	32.96	3.08	0.00	0.00	41.17	133.41
GOOSE CREEK CT3	3.84	2.80	0.00	0.00	0.00	0.00	41.24	20.54	0.00	0.00	0.00	44.58	113.00
GOOSE CREEK CT4	3.56	2.55	0.00	0.00	2.86	0.00	36.01	18.46	0.00	0.00	0.00	25.58	89.02
GOOSE CREEK CT5	4.17	2.55	0.00	0.00	0.00	0.00	37.93	5.49	0.00	0.00	0.00	17.96	68.11
GOOSE CREEK CT6	2.70	2.32	0.00	0.00	0.00	0.00	26.08	14.21	0.00	0.00	0.00	18.98	64.28
HOWARD BEND CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.73
KINMUNDY CT 1	175.07	104.14	12.25	0.00	7.72	74.86	180.67	115.44	30.63	0.00	7.95	144.28	853.02
KINMUNDY CT 2	142.48	100.25	10.75	0.00	3.80	73.86	175.43	92.06	29.09	0.00	7.95	138.89	774.57
KIRKSVILLE CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00	0.79
LABADIE 1	4,869.99	4,349.36	4,996.97	4,806.54	4,493.99	4,408.15	4,761.82	4,713.55	2,399.46	0.00	0.00	4,138.13	43,937.97
LABADIE 2	4,845.42	4,442.32	4,767.39	4,567.57	4,771.08	4,203.48	4,155.04	4,432.52	4,378.16	4,718.96	4,696.57	4,592.52	54,570.94
LABADIE 3	5,034.10	4,284.65	4,909.49	4,758.42	5,104.44	4,484.63	4,230.04	4,950.83	4,659.10	4,641.27	4,631.48	5,065.44	56,753.88
LABADIE 4	4,874.72	4,666.72	5,279.92	5,151.22	4,925.65	4,755.82	4,822.00	4,439.78	4,677.93	4,728.71	4,957.27	4,884.97	58,164.71
MERAMEC 1	1,119.37	1,025.25	368.95	0.00	433.59	1,097.87	1,117.29	946.90	958.61	1,060.74	1,065.44	1,180.12	10,374.14
MERAMEC 2	1,151.79	1,086.61	1,208.41	1,081.38	1,194.81	1,089.83	1,170.59	1,139.97	1,082.25	1,118.20	1,061.13	1,208.54	13,593.50
MERAMEC 3	2,747.81	2,074.12	2,856.97	2,450.57	2,184.81	2,309.71	2,424.50	2,449.36	1,263.23	775.43	2,310.05	2,566.65	26,413.20
MERAMEC 4	3,113.98	3,025.94	3,603.08	3,293.56	2,797.79	3,062.68	3,251.96	3,287.01	3,102.40	1,463.89	2,215.70	2,998.09	35,216.08
MERAMEC CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.15	0.00	0.00	0.00	0.00	3.15
MERAMEC CT2	0.00	1.18	0.00	0.00	0.00	0.00	0.00	6.32	0.00	0.00	0.00	8.65	16.15
MEXICO CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09	0.00	0.00	0.00	0.00	2.09
MOBERLY CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00	0.00	0.00	0.00	1.10
MOREAU CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	0.00	0.00	0.00	0.00	1.08
PENO CREEK CT1	130.67	83.57	30.53	0.00	31.18	96.67	197.53	158.82	38.08	17.33	14.50	123.21	922.11
PENO CREEK CT2	126.60	83.58	30.53	0.00	27.11	96.38	196.39	150.70	35.01	16.97	14.50	122.07	899.84
PENO CREEK CT3	124.33	83.50	30.53	0.00	23.21	96.13	194.80	145.52	33.34	15.96	14.50	121.45	883.28
PENO CREEK CT4	118.43	83.33	30.38	0.00	19.83	95.97	192.64	140.57	32.54	15.94	14.50	118.60	862.76
PINCKNEY CT1	164.29	98.66	41.16	6.97	39.16	192.79	273.64	222.73	62.56	22.48	25.37	199.74	1,349.55
PINCKNEY CT2	162.86	98.64	39.70	6.97	36.53	192.00	271.00	218.53	60.79	22.49	25.37	199.08	1,333.97
PINCKNEY CT3	161.59	98.64	39.43	6.97	34.56	190.86	269.16	214.93	59.59	22.34	25.37	198.82	1,322.27
PINCKNEY CT4	160.53	98.64	38.96	6.97	32.33	190.03	267.45	210.58	58.47	22.34	25.37	197.53	1,309.19
PINCKNEY CT5	13.04	15.57	2.54	0.00	0.38	0.00	16.64	9.60	0.00	0.00	2.63	33.21	93.61
PINCKNEY CT6	10.80	14.84	2.54	0.00	0.38	0.00	16.24	8.08	0.00	0.00	2.63	31.95	87.45
PINCKNEY CT7	8.71	14.27	2.24	0.00	0.33	0.00	16.23	7.44	0.00	0.00	2.63	29.87	81.74

PINCKNEY CT8	7.75	14.01	2.12	0.00	0.19	0.00	16.13	6.93	0.00	0.00	2.63	28.50	78.26
RACCOON CRK CT1	117.86	80.29	46.10	0.00	41.83	130.04	275.35	201.38	44.00	0.00	11.64	121.56	1,070.06
RACCOON CRK CT2	88.50	69.05	45.93	0.00	30.84	120.79	273.25	163.75	38.24	0.00	10.55	122.70	963.60
RACCOON CRK CT4	99.52	70.30	35.65	0.00	19.46	116.08	261.43	160.08	37.24	0.00	11.64	107.67	919.09
RUSH ISLAND 1	6,172.03	3,134.21	0.00	6,078.48	5,036.81	5,648.22	5,706.97	5,701.06	5,413.44	6,164.61	4,280.30	6,150.74	59,486.86
RUSH ISLAND 2	6,270.90	5,699.64	6,020.83	6,035.71	5,848.16	5,778.44	5,410.31	6,318.32	5,777.00	6,201.41	5,827.47	5,760.98	70,949.19
SIOUX 1	5,298.13	5,023.59	5,023.54	4,992.99	4,815.93	4,138.17	4,072.42	5,302.73	4,590.87	0.00	0.00	3,188.28	46,446.64
SIOUX 2	5,648.96	5,107.90	5,643.95	5,267.70	4,686.64	5,170.81	5,302.95	5,076.25	4,840.07	4,991.44	5,281.19	5,526.53	62,544.40
VENICE CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VENICE CT2	18.02	1.50	9.07	0.00	4.86	0.00	42.03	13.78	0.00	0.00	0.00	131.16	220.42
VENICE CT3	285.24	117.87	21.99	0.00	66.89	146.31	347.72	252.72	39.76	0.00	11.28	417.58	1,707.37
VENICE CT4	235.15	95.48	19.85	0.00	46.62	144.81	327.61	210.86	35.76	0.00	10.52	397.92	1,524.58
VENICE CT5	0.43	2.88	0.00	0.00	0.00	0.00	34.31	10.80	0.00	0.00	0.00	43.95	92.37
VIADUCT CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	57,461.29	48,906.48	49,089.22	48,638.36	48,773.20	51,841.73	54,367.31	55,507.61	47,531.45	39,953.86	40,369.13	54,428.40	596,868.05
Units													
Coal	51,147.21	43,920.30	44,679.39	48,484.15	46,293.70	46,147.82	46,425.90	48,758.26	43,142.51	35,864.67	36,326.61	47,261.00	538,451.52
Nuclear	3,931.86	3,539.72	3,917.55	126.33	2,005.32	3,736.33	3,866.60	3,868.55	3,750.75	3,933.34	3,800.96	3,929.05	40,406.38
CT	2,382.22	1,446.46	492.27	27.88	474.17	1,957.59	4,074.81	2,880.80	638.18	155.85	241.57	3,238.35	18,010.15

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Total Expense ($1000)
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rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.40	0.00	0.00	0.00	0.00	4.40
AUDRAIN CT2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.13	0.00	0.00	0.00	0.00	4.13
AUDRAIN CT3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.98	0.00	0.00	0.00	0.00	3.98
AUDRAIN CT4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.64	0.00	0.00	0.00	0.00	3.64
AUDRAIN CT5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.31	0.00	0.00	0.00	0.00	3.31
AUDRAIN CT6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.27	0.00	0.00	0.00	1.12	4.39
AUDRAIN CT7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.48	0.00	0.00	0.00	0.00	2.48
AUDRAIN CT8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CALLAWAY 1	3,931.86	3,539.72	3,917.55	126.33	2,005.32	3,736.33	3,866.60	3,868.55	3,750.75	3,933.34	3,800.96	3,929.05	40,406.38
FAIRGROUNDS GT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	0.00	0.00	0.00	0.00	1.07
GOOSE CREEK CT1	8.75	3.16	0.00	0.00	2.06	0.00	43.95	32.28	0.00	0.00	0.00	50.54	140.73
GOOSE CREEK CT2	7.34	2.87	0.00	0.00	2.03	0.00	43.95	32.96	3.08	0.00	0.00	41.17	133.41
GOOSE CREEK CT3	3.84	2.80	0.00	0.00	0.00	0.00	41.24	20.54	0.00	0.00	0.00	44.58	113.00
GOOSE CREEK CT4	3.56	2.55	0.00	0.00	2.86	0.00	36.01	18.46	0.00	0.00	0.00	25.58	89.02
GOOSE CREEK CT5	4.17	2.55	0.00	0.00	0.00	0.00	37.93	5.49	0.00	0.00	0.00	17.96	68.11
GOOSE CREEK CT6	2.70	2.32	0.00	0.00	0.00	0.00	26.08	14.21	0.00	0.00	0.00	18.98	64.28
HOWARD BEND CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.73
KINMUNDY CT 1	175.07	104.14	12.25	0.00	7.72	74.86	180.67	115.44	30.63	0.00	7.95	144.28	853.02
KINMUNDY CT 2	142.48	100.25	10.75	0.00	3.80	73.86	175.43	92.06	29.09	0.00	7.95	138.89	774.57
KIRKSVILLE CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00	0.79
LABADIE 1	4,869.99	4,349.36	4,996.97	4,806.54	4,493.99	4,408.15	4,761.82	4,713.55	2,399.46	0.00	0.00	4,138.13	43,937.97
LABADIE 2	4,845.42	4,442.32	4,767.29	4,567.57	4,771.08	4,203.48	4,155.04	4,432.52	4,378.16	4,718.96	4,696.57	4,592.52	54,570.94
LABADIE 3	5,034.10	4,284.65	4,909.49	4,758.42	5,104.44	4,484.63	4,230.04	4,950.83	4,659.10	4,641.27	4,631.48	5,065.44	56,753.88
LABADIE 4	4,874.72	4,666.72	5,279.92	5,151.22	4,925.65	4,755.82	4,822.00	4,439.78	4,677.93	4,728.71	4,957.27	4,884.97	58,164.71
MERAMEC 1	1,119.37	1,025.25	368.95	0.00	433.59	1,097.87	1,117.29	946.90	958.61	1,060.74	1,065.44	1,180.12	10,374.14
MERAMEC 2	1,151.79	1,086.61	1,208.41	1,081.38	1,194.81	1,089.83	1,170.59	1,139.97	1,082.25	1,118.20	1,061.13	1,208.54	13,593.50
MERAMEC 3	2,747.81	2,074.12	2,856.97	2,450.57	2,184.81	2,309.71	2,424.50	2,449.36	1,263.23	775.43	2,310.05	2,566.65	26,413.20
MERAMEC 4	3,113.98	3,025.94	3,603.08	3,293.56	2,797.79	3,062.68	3,251.96	3,287.01	3,102.40	1,463.89	2,215.70	2,998.09	35,216.08
MERAMEC CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.15	0.00	0.00	0.00	0.00	3.15
MERAMEC CT2	0.00	1.18	0.00	0.00	0.00	0.00	0.00	6.32	0.00	0.00	0.00	8.65	16.15
MEXICO CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09	0.00	0.00	0.00	0.00	2.09
MOBERLY CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00	0.00	0.00	0.00	1.10
MOREAU CT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	0.00	0.00	0.00	0.00	1.08
PENO CREEK CT1	130.67	83.57	30.53	0.00	31.18	96.67	197.53	158.82	38.08	17.33	14.50	123.21	922.11
PENO CREEK CT2	126.60	83.58	30.53	0.00	27.11	96.38	196.39	150.70	35.01	16.97	14.50	122.07	899.84
PENO CREEK CT3	124.33	83.50	30.53	0.00	23.21	96.13	194.80	145.52	33.34	15.96	14.50	121.45	883.28
PENO CREEK CT4	118.43	83.33	30.38	0.00	19.83	95.97	192.64	140.57	32.54	15.94	14.50	118.60	862.76
PINCKNEY CT1	164.29	98.66	41.16	6.97	39.16	192.79	273.64	222.73	62.56	22.48	25.37	199.74	1,349.55
PINCKNEY CT2	162.86	98.64	39.70	6.97	36.53	192.00	271.00	218.53	60.79	22.49	25.37	199.08	1,333.97
PINCKNEY CT3	161.59	98.64	39.43	6.97	34.56	190.86	269.16	214.93	59.59	22.34	25.37	198.82	1,322.27
PINCKNEY CT4	160.53	98.64	38.96	6.97	32.33	190.03	267.45	210.58	58.47	22.34	25.37	197.53	1,309.19
PINCKNEY CT5	13.04	15.57	2.54	0.00	0.38	0.00	16.64	9.60	0.00	0.00	2.63	33.21	93.61
PINCKNEY CT6	10.80	14.84	2.54	0.00	0.38	0.00	16.24	8.08	0.00	0.00	2.63	31.95	87.45
PINCKNEY CT7	8.71	14.27	2.24	0.00	0.33	0.00	16.23	7.44	0.00	0.00	2.63	29.87	81.74

PINCKNEY CT8	7.75	14.01	2.12	0.00	0.19	0.00	16.13	6.93	0.00	0.00	2.63	28.50	78.26
RACCOON CRK CT1	117.86	80.29	46.10	0.00	41.83	130.04	275.35	201.38	44.00	0.00	11.64	121.56	1,070.06
RACCOON CRK CT2	88.50	69.05	45.93	0.00	30.84	120.79	273.25	163.75	38.24	0.00	10.55	122.70	963.60
RACCOON CRK CT4	99.52	70.30	35.65	0.00	19.46	116.08	261.43	160.08	37.24	0.00	11.64	107.67	919.09
RUSH ISLAND 1	6,172.03	3,134.21	0.00	6,078.48	5,036.81	5,648.22	5,706.97	5,701.06	5,413.44	6,164.61	4,280.30	6,150.74	59,486.86
RUSH ISLAND 2	6,270.90	5,699.64	6,020.83	6,035.71	5,848.16	5,778.44	5,410.31	6,318.32	5,777.00	6,201.41	5,827.47	5,760.98	70,949.19
SIOUX 1	5,298.13	5,023.59	5,023.54	4,992.99	4,815.93	4,138.17	4,072.42	5,302.73	4,590.87	0.00	0.00	3,188.28	46,446.64
SIOUX 2	5,648.96	5,107.90	5,643.95	5,267.70	4,686.64	5,170.81	5,302.95	5,076.25	4,840.07	4,991.44	5,281.19	5,526.53	62,544.40
VENICE CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VENICE CT2	18.02	1.50	9.07	0.00	4.86	0.00	42.03	13.78	0.00	0.00	0.00	131.16	220.42
VENICE CT3	285.24	117.87	21.99	0.00	66.89	146.31	347.72	252.72	39.76	0.00	11.28	417.58	1,707.37
VENICE CT4	235.15	95.48	19.85	0.00	46.62	144.81	327.61	210.86	35.76	0.00	10.52	397.92	1,524.58
VENICE CT5	0.43	2.88	0.00	0.00	0.00	0.00	34.31	10.80	0.00	0.00	0.00	43.95	92.37
VIADUCT CT1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pumped Storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydro Units													
KEOKUK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OSAGE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Purchases													
APL FIXED-F	1,335.07	1,293.03	1,489.19	1,411.13	1,210.97	1,166.93	1,423.14	1,411.13	1,291.03	1,489.19	1,441.15	1,441.15	16,403.11
APL FIXED-E	0.07	0.00	0.00	0.00	0.00	0.36	1.11	0.03	0.01	0.00	0.00	0.17	1.76
PURCHASES	3.35	27.85	29.99	45.62	1,995.30	1,129.83	3,987.09	5,457.45	1,511.71	433.48	137.63	161.98	14,921.28
Sales													
SALES (B)	-44,451.71	-32,620.99	-43,503.72	-33,546.99	-24,210.51	-24,281.25	-12,792.50	-15,929.34	-19,548.37	-17,604.75	-20,069.78	-31,189.46	-319,749.37
SALES (O)	-1,635.01	-712.88	-956.72	-620.76	-455.42	-420.81	-22.50	-72.66	-191.69	-8.24	-34.09	-627.36	-5,758.12
Total	12,713.05	16,893.49	6,147.96	15,927.36	27,313.53	29,436.79	46,963.66	46,374.23	30,594.14	24,263.54	21,844.04	24,214.89	302,686.69
Units	57,461.29	48,906.48	49,089.22	48,638.36	48,773.20	51,841.73	54,367.31	55,507.61	47,531.45	39,953.86	40,369.13	54,428.40	596,868.05
Coal	51,147.21	43,920.30	44,679.39	48,484.15	46,293.70	46,147.82	46,425.90	48,758.26	43,142.51	35,864.67	36,326.61	47,261.00	538,451.52
Nuclear	3,931.86	3,539.72	3,917.55	126.33	2,005.32	3,736.33	3,866.60	3,868.55	3,750.75	3,933.34	3,800.96	3,929.05	40,406.38
CT	2,382.22	1,446.46	492.27	27.88	474.17	1,957.59	4,074.81	2,880.80	638.18	155.85	241.57	3,238.35	18,010.15
Purchases	1,338.49	1,320.89	1,519.18	1,456.75	3,206.26	2,297.12	5,411.34	6,868.61	2,802.75	1,922.67	1,578.78	1,603.30	31,326.14
Sales	-46,086.72	-33,333.88	-44,460.43	-34,167.74	-24,665.93	-24,702.06	-12,814.99	-16,002.00	-19,740.06	-17,612.99	-20,103.87	-31,816.81	-325,507.49

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

BTUs Consumed (1,000,000s)
Page: 1

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0	0	0	0	0	0	0	642	0	0	0	0	642
AUDRAIN CT2	0	0	0	0	0	0	0	603	0	0	0	0	603
AUDRAIN CT3	0	0	0	0	0	0	0	580	0	0	0	0	580
AUDRAIN CT4	0	0	0	0	0	0	0	531	0	0	0	0	531
AUDRAIN CT5	0	0	0	0	0	0	0	483	0	0	0	0	483
AUDRAIN CT6	0	0	0	0	0	0	0	476	0	0	0	150	626
AUDRAIN CT7	0	0	0	0	0	0	0	362	0	0	0	0	362
AUDRAIN CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1	8,704,582	7,836,446	8,653,758	278,434	4,381,308	8,127,754	8,356,608	8,378,921	8,194,790	8,631,430	8,396,193	8,698,374	88,638,596
FAIRGROUNDS GT	0	0	0	0	0	0	0	119	0	0	0	0	119
GOOSE CREEK CT1	1,624	547	0	0	334	0	7,217	5,035	0	0	0	6,904	21,660
GOOSE CREEK CT2	1,361	497	0	0	330	0	7,217	5,142	484	0	0	5,625	20,656
GOOSE CREEK CT3	713	484	0	0	0	0	6,772	3,204	0	0	0	6,090	17,263
GOOSE CREEK CT4	660	442	0	0	464	0	5,913	2,879	0	0	0	3,495	13,852
GOOSE CREEK CT5	774	442	0	0	0	0	6,228	856	0	0	0	2,454	10,754
GOOSE CREEK CT6	501	401	0	0	0	0	4,282	2,216	0	0	0	2,593	9,992
HOWARD BEND CT	0	0	0	0	0	0	0	81	0	0	0	0	81
KINMUNDY CT 1	33,604	18,432	1,829	0	1,256	12,134	29,235	17,787	4,662	0	1,243	20,349	140,530
KINMUNDY CT 2	27,347	17,744	1,605	0	618	11,970	28,386	14,185	4,427	0	1,243	19,590	127,116
KIRKSVILLE CT	0	0	0	0	0	0	0	118	0	0	0	0	118
LABADIE 1	3,926,592	3,502,444	4,029,813	3,875,239	3,619,279	3,549,269	3,840,180	3,791,346	1,929,550	0	0	3,318,967	35,382,677
LABADIE 2	3,899,748	3,582,513	3,830,249	3,683,527	3,847,647	3,385,361	3,336,516	3,554,714	3,522,349	3,792,728	3,785,082	3,697,102	43,917,534
LABADIE 3	4,059,759	3,451,293	3,954,486	3,815,300	4,113,664	3,604,830	3,394,133	3,985,021	3,751,025	3,724,210	3,725,160	4,079,574	45,658,454
LABADIE 4	3,919,457	3,760,227	4,253,216	4,154,210	3,963,850	3,828,981	3,882,978	3,567,197	3,769,362	3,795,903	3,989,133	3,918,766	46,803,281
MERAMEC 1	816,116	745,911	266,780	0	314,166	798,052	811,779	686,344	694,708	763,622	772,716	854,218	7,524,411
MERAMEC 2	840,715	790,658	875,501	785,785	868,334	791,904	851,286	827,489	784,560	805,481	768,622	875,328	9,865,663
MERAMEC 3	2,004,471	1,503,966	2,070,183	1,778,486	1,584,299	1,672,212	1,759,977	1,774,726	915,134	552,620	1,671,803	1,854,409	19,142,286
MERAMEC 4	2,269,221	2,201,550	2,611,692	2,395,804	2,028,757	2,223,470	2,361,310	2,384,558	2,249,513	1,056,302	1,602,934	2,167,063	25,552,175
MERAMEC CT1	0	0	0	0	0	0	0	351	0	0	0	0	351
MERAMEC CT2	0	184	0	0	0	0	0	942	0	0	0	1,186	2,313
MEXICO CT	0	0	0	0	0	0	0	233	0	0	0	0	233
MOBERLY CT	0	0	0	0	0	0	0	122	0	0	0	0	122
MOREAU CT	0	0	0	0	0	0	0	120	0	0	0	0	120
PENO CREEK CT1	24,244	14,458	4,530	0	5,053	15,693	32,436	24,777	5,979	2,254	2,204	16,832	148,460
PENO CREEK CT2	23,487	14,460	4,530	0	4,395	15,646	32,248	23,511	5,496	2,207	2,204	16,676	144,859
PENO CREEK CT3	23,066	14,447	4,530	0	3,761	15,606	31,987	22,702	5,234	2,076	2,204	16,592	142,204
PENO CREEK CT4	21,972	14,418	4,508	0	3,214	15,580	31,632	21,931	5,109	2,073	2,204	16,203	138,843
PINCKNEY CT1	31,533	17,462	6,144	1,181	6,367	31,247	44,278	34,319	9,522	2,966	3,965	28,172	217,155
PINCKNEY CT2	31,259	17,458	5,926	1,181	5,940	31,118	43,852	33,672	9,253	2,967	3,965	28,079	214,669
PINCKNEY CT3	31,016	17,458	5,885	1,181	5,619	30,934	43,553	33,117	9,070	2,947	3,965	28,043	212,789
PINCKNEY CT4	30,812	17,458	5,815	1,181	5,257	30,799	43,277	32,447	8,899	2,947	3,965	27,860	210,716
PINCKNEY CT5	2,502	2,756	379	0	62	0	2,693	1,480	0	0	411	4,684	14,967
PINCKNEY CT6	2,073	2,627	379	0	62	0	2,627	1,245	0	0	411	4,507	13,930
PINCKNEY CT7	1,672	2,526	335	0	54	0	2,627	1,147	0	0	411	4,213	12,985

PINCKNEY CT8	1,488	2,480	316	0	32	0	2,610	1,067	0	0	411	4,020	12,423
RACCOON CRK CT1	21,866	13,891	6,840	0	6,779	21,110	45,214	31,417	6,908	0	1,769	16,607	172,401
RACCOON CRK CT2	16,420	11,946	6,814	0	4,999	19,608	44,869	25,547	6,002	0	1,603	16,763	154,570
RACCOON CRK CT4	18,463	12,163	5,289	0	3,155	18,845	42,928	24,973	5,846	0	1,769	14,710	148,142
RUSH ISLAND 1	3,846,402	1,949,333	0	3,767,336	3,131,124	3,507,376	3,537,733	3,544,247	3,358,670	3,837,579	2,629,960	3,823,001	36,932,760
RUSH ISLAND 2	3,896,834	3,540,957	3,744,430	3,760,132	3,627,918	3,573,732	3,356,464	3,929,072	3,595,514	3,846,868	3,616,216	3,570,505	44,058,643
SIOUX 1	3,157,464	2,994,225	2,992,652	2,975,872	2,866,220	2,463,634	2,421,316	3,160,118	2,733,979	0	0	1,895,998	27,661,478
SIOUX 2	3,368,492	3,045,858	3,365,502	3,141,148	2,794,658	3,083,367	3,162,165	3,026,982	2,886,146	2,976,412	3,149,192	3,295,486	37,295,406
VENICE CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2	3,218	233	1,303	0	765	0	6,629	2,059	0	0	0	18,097	32,305
VENICE CT3	51,862	19,323	3,205	0	10,567	22,897	55,194	37,889	5,763	0	1,674	57,757	266,131
VENICE CT4	42,754	15,652	2,894	0	7,364	22,662	52,002	31,614	5,182	0	1,561	55,038	236,723
VENICE CT5	79	473	0	0	0	0	5,446	1,618	0	0	0	6,079	13,695
VIADUCT CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	45,156	39,156	40,721	34,416	37,218	40,926	41,734	43,054	38,483	33,804	34,144	42,498	471,310

BTUs Consumed totals are expressed in billions of BTU.

Units													
Coal	36,005,270	31,068,934	31,994,504	34,132,838	32,759,915	32,482,188	32,715,837	34,231,814	30,190,509	25,151,725	25,710,818	33,350,416	379,794,768
Nuclear	8,704,582	7,836,446	8,653,758	278,434	4,381,308	8,127,754	8,356,608	8,378,921	8,194,790	8,631,430	8,396,193	8,698,374	88,638,596
CT	446,368	250,862	73,055	4,726	76,446	315,848	661,349	443,602	97,836	20,435	37,180	449,365	2,877,073

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Generating Units													
AUDRAIN CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
AUDRAIN CT2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
AUDRAIN CT3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
AUDRAIN CT4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
AUDRAIN CT5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
AUDRAIN CT6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
AUDRAIN CT7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
AUDRAIN CT8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CALLAWAY 1	1.000	1.000	1.000	0.033	0.515	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.879
FAIRGROUNDS GT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GOOSE CREEK CT1	0.002	0.001	0.000	0.000	0.000	0.000	0.011	0.007	0.000	0.000	0.000	0.010	0.003
GOOSE CREEK CT2	0.002	0.001	0.000	0.000	0.000	0.000	0.011	0.008	0.001	0.000	0.000	0.008	0.003
GOOSE CREEK CT3	0.001	0.001	0.000	0.000	0.000	0.000	0.010	0.005	0.000	0.000	0.000	0.008	0.002
GOOSE CREEK CT4	0.001	0.001	0.000	0.000	0.001	0.000	0.009	0.004	0.000	0.000	0.000	0.005	0.002
GOOSE CREEK CT5	0.001	0.001	0.000	0.000	0.000	0.000	0.009	0.001	0.000	0.000	0.000	0.003	0.001
GOOSE CREEK CT6	0.001	0.001	0.000	0.000	0.000	0.000	0.006	0.003	0.000	0.000	0.000	0.004	0.001
HOWARD BEND CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
KINMUNDY CT 1	0.032	0.020	0.002	0.000	0.001	0.012	0.028	0.017	0.005	0.000	0.001	0.020	0.011
KINMUNDY CT 2	0.026	0.019	0.001	0.000	0.001	0.012	0.027	0.013	0.004	0.000	0.001	0.019	0.010
KIRKSVILLE CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LABADIE 1	0.876	0.865	0.898	0.893	0.807	0.817	0.857	0.844	0.444	0.000	0.000	0.740	0.670
LABADIE 2	0.872	0.886	0.855	0.852	0.861	0.781	0.744	0.794	0.814	0.847	0.875	0.827	0.834
LABADIE 3	0.893	0.839	0.869	0.865	0.905	0.818	0.745	0.876	0.852	0.818	0.846	0.897	0.852
LABADIE 4	0.863	0.918	0.938	0.947	0.874	0.872	0.855	0.785	0.859	0.836	0.909	0.862	0.876
MERAMEC 1	0.787	0.798	0.258	0.000	0.301	0.796	0.782	0.662	0.689	0.733	0.769	0.826	0.616
MERAMEC 2	0.801	0.835	0.835	0.773	0.827	0.779	0.810	0.787	0.770	0.765	0.754	0.834	0.798
MERAMEC 3	0.882	0.731	0.911	0.807	0.694	0.757	0.773	0.779	0.415	0.241	0.758	0.815	0.714
MERAMEC 4	0.746	0.805	0.863	0.817	0.666	0.756	0.778	0.786	0.766	0.349	0.544	0.713	0.715
MERAMEC CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
MERAMEC CT2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.002	0.000
MEXICO CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MOBERLY CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MOREAU CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PENO CREEK CT1	0.061	0.040	0.011	0.000	0.013	0.042	0.086	0.065	0.015	0.006	0.005	0.042	0.032
PENO CREEK CT2	0.059	0.040	0.011	0.000	0.011	0.042	0.086	0.062	0.014	0.005	0.005	0.042	0.031
PENO CREEK CT3	0.058	0.040	0.011	0.000	0.010	0.042	0.085	0.059	0.014	0.005	0.005	0.041	0.031
PENO CREEK CT4	0.055	0.040	0.011	0.000	0.008	0.041	0.084	0.057	0.013	0.005	0.005	0.040	0.030
PINCKNEY CT1	0.105	0.065	0.020	0.004	0.021	0.106	0.133	0.103	0.030	0.010	0.013	0.095	0.060
PINCKNEY CT2	0.104	0.065	0.020	0.004	0.020	0.105	0.132	0.101	0.029	0.010	0.013	0.095	0.060
PINCKNEY CT3	0.103	0.065	0.019	0.004	0.019	0.104	0.131	0.099	0.029	0.010	0.013	0.095	0.059
PINCKNEY CT4	0.103	0.065	0.019	0.004	0.017	0.104	0.130	0.097	0.028	0.010	0.013	0.094	0.059
PINCKNEY CT5	0.006	0.008	0.001	0.000	0.000	0.000	0.008	0.004	0.000	0.000	0.001	0.012	0.003
PINCKNEY CT6	0.005	0.007	0.001	0.000	0.000	0.000	0.007	0.003	0.000	0.000	0.001	0.012	0.003
PINCKNEY CT7	0.004	0.007	0.001	0.000	0.000	0.000	0.007	0.003	0.000	0.000	0.001	0.011	0.003

PINCKNEY CT8	0.004	0.007	0.001	0.000	0.000	0.000	0.007	0.003	0.000	0.000	0.001	0.010	0.003
RACCOON CRK CT1	0.032	0.022	0.010	0.000	0.010	0.032	0.068	0.046	0.010	0.000	0.002	0.024	0.022
RACCOON CRK CT2	0.024	0.019	0.010	0.000	0.007	0.030	0.067	0.038	0.009	0.000	0.002	0.025	0.019
RACCOON CRK CT4	0.027	0.019	0.008	0.000	0.005	0.029	0.064	0.037	0.009	0.000	0.002	0.022	0.019
RUSH ISLAND 1	0.840	0.467	0.000	0.855	0.685	0.791	0.771	0.773	0.756	0.840	0.591	0.837	0.685
RUSH ISLAND 2	0.855	0.860	0.825	0.852	0.789	0.806	0.731	0.861	0.810	0.842	0.819	0.776	0.818
SIOUX 1	0.860	0.905	0.815	0.840	0.776	0.687	0.651	0.860	0.765	0.000	0.000	0.510	0.638
SIOUX 2	0.914	0.919	0.914	0.883	0.753	0.859	0.853	0.817	0.802	0.804	0.881	0.894	0.857
VENICE CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
VENICE CT2	0.008	0.001	0.003	0.000	0.002	0.000	0.017	0.005	0.000	0.000	0.000	0.044	0.007
VENICE CT3	0.036	0.015	0.002	0.000	0.008	0.017	0.041	0.028	0.004	0.000	0.001	0.041	0.016
VENICE CT4	0.030	0.012	0.002	0.000	0.005	0.017	0.038	0.023	0.004	0.000	0.001	0.039	0.014
VENICE CT5	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.001	0.000	0.000	0.000	0.005	0.001
VIADUCT CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Average	0.618	0.594	0.559	0.487	0.510	0.580	0.572	0.592	0.546	0.464	0.482	0.579	0.549
Units													
Coal	0.860	0.822	0.766	0.845	0.783	0.799	0.778	0.816	0.744	0.601	0.632	0.794	0.770
Nuclear	1.000	1.000	1.000	0.033	0.515	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.879
CT	0.018	0.011	0.003	0.000	0.003	0.014	0.027	0.028	0.004	0.001	0.001	0.018	0.010

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Average Heat Rate (BTUs/KWH)

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Generating Units													
AUDRAIN CT1	0	0	0	0	0	0	0	12,144	0	0	0	0	12,144
AUDRAIN CT2	0	0	0	0	0	0	0	12,036	0	0	0	0	12,036
AUDRAIN CT3	0	0	0	0	0	0	0	12,275	0	0	0	0	12,275
AUDRAIN CT4	0	0	0	0	0	0	0	12,179	0	0	0	0	12,179
AUDRAIN CT5	0	0	0	0	0	0	0	12,136	0	0	0	0	12,136
AUDRAIN CT6	0	0	0	0	0	0	0	12,230	0	0	0	12,888	12,382
AUDRAIN CT7	0	0	0	0	0	0	0	12,436	0	0	0	0	12,436
AUDRAIN CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1	9,983	9,984	9,984	9,984	10,006	9,984	9,984	9,984	9,984	9,984	9,984	9,984	9,985
FAIRGROUNDS GT	0	0	0	0	0	0	0	11,103	0	0	0	0	11,103
GOOSE CREEK CT1	12,425	12,817	0	0	11,992	0	11,986	12,170	0	0	0	12,502	12,241
GOOSE CREEK CT2	12,614	12,682	0	0	12,046	0	11,986	12,123	12,114	0	0	12,509	12,217
GOOSE CREEK CT3	12,446	12,870	0	0	0	0	11,988	12,074	0	0	0	12,588	12,249
GOOSE CREEK CT4	12,311	12,682	0	0	12,247	0	12,001	12,122	0	0	0	12,682	12,233
GOOSE CREEK CT5	12,390	12,682	0	0	0	0	11,975	12,190	0	0	0	12,613	12,185
GOOSE CREEK CT6	12,689	12,823	0	0	0	0	11,975	12,177	0	0	0	12,622	12,245
HOWARD BEND CT	0	0	0	0	0	0	0	12,882	0	0	0	0	12,882
KINMUNDY CT 1	12,350	12,259	12,489	0	12,710	12,067	12,048	12,180	12,110	0	12,363	12,293	12,216
KINMUNDY CT 2	12,257	12,258	12,451	0	12,498	12,063	12,047	12,179	12,093	0	12,363	12,263	12,182
KIRKSVILLE CT	0	0	0	0	0	0	0	24,481	0	0	0	0	24,481
LABADIE 1	10,094	10,092	10,100	10,098	10,087	10,096	10,094	10,100	10,094	0	0	10,089	10,095
LABADIE 2	10,100	10,107	10,108	10,092	10,100	10,108	10,111	10,096	10,099	10,102	10,102	10,093	10,101
LABADIE 3	9,972	9,976	9,973	9,978	9,970	9,969	9,969	9,972	9,967	9,966	9,967	9,971	9,971
LABADIE 4	9,983	9,976	9,974	9,971	9,969	9,975	9,983	9,986	9,973	9,973	9,968	9,987	9,976
MERAMEC 1	11,315	11,297	11,280	0	11,370	11,322	11,332	11,313	11,378	11,366	11,338	11,301	11,328
MERAMEC 2	11,279	11,263	11,271	11,278	11,281	11,293	11,295	11,311	11,317	11,320	11,319	11,281	11,292
MERAMEC 3	11,184	11,184	11,179	11,189	11,214	11,204	11,195	11,200	11,210	11,212	11,202	11,194	11,195
MERAMEC 4	11,466	11,430	11,420	11,431	11,474	11,461	11,449	11,445	11,449	11,434	11,481	11,465	11,449
MERAMEC CT1	0	0	0	0	0	0	0	11,375	0	0	0	0	11,375
MERAMEC CT2	0	12,778	0	0	0	0	0	12,355	0	0	0	12,624	12,522
MEXICO CT	0	0	0	0	0	0	0	12,033	0	0	0	0	12,033
MOBERLY CT	0	0	0	0	0	0	0	11,330	0	0	0	0	11,330
MOREAU CT	0	0	0	0	0	0	0	11,103	0	0	0	0	11,103
PENO CREEK CT1	10,828	10,805	10,910	0	10,944	10,740	10,732	10,787	10,840	10,911	11,124	10,886	10,807
PENO CREEK CT2	10,838	10,807	10,910	0	10,868	10,744	10,738	10,785	10,840	10,935	11,128	10,873	10,806
PENO CREEK CT3	10,855	10,810	10,911	0	10,853	10,741	10,736	10,779	10,828	10,871	11,124	10,880	10,806
PENO CREEK CT4	10,862	10,815	10,920	0	10,854	10,745	10,731	10,788	10,816	10,875	11,124	10,906	10,811
PINCKNEY CT1	10,576	10,548	10,670	10,791	10,641	10,250	10,146	10,169	10,372	10,542	10,791	10,591	10,373
PINCKNEY CT2	10,571	10,549	10,616	10,791	10,622	10,254	10,143	10,171	10,357	10,540	10,791	10,583	10,369
PINCKNEY CT3	10,565	10,549	10,628	10,791	10,635	10,254	10,143	10,172	10,337	10,535	10,791	10,586	10,369
PINCKNEY CT4	10,580	10,549	10,637	10,791	10,647	10,245	10,139	10,159	10,333	10,535	10,791	10,583	10,366
PINCKNEY CT5	13,516	13,195	13,147	0	13,147	0	13,139	13,455	0	0	13,147	13,155	13,247
PINCKNEY CT6	13,531	13,182	13,147	0	13,330	0	13,094	13,403	0	0	13,147	13,193	13,237
PINCKNEY CT7	13,296	13,244	13,747	0	13,830	0	13,095	13,322	0	0	13,147	13,329	13,266

PINCKNEY CT8	13,147	13,167	13,147	0	13,147	0	13,127	13,292	0	0	13,147	13,158	13,163
RACCOON CRK CT1	12,110	12,070	12,038	0	12,181	11,965	11,965	12,041	12,026	0	12,114	12,109	12,034
RACCOON CRK CT2	12,115	12,055	12,038	0	12,228	11,949	11,954	12,014	11,992	0	12,114	12,131	12,022
RACCOON CRK CT4	12,102	12,070	12,051	0	12,160	11,949	11,949	12,037	11,984	0	12,114	12,121	12,020
RUSH ISLAND 1	10,376	10,467	0	10,291	10,341	10,366	10,369	10,385	10,382	10,351	10,376	10,339	10,362
RUSH ISLAND 2	10,330	10,336	10,289	10,356	10,416	10,363	10,407	10,345	10,408	10,357	10,349	10,428	10,364
SIOUX 1	9,859	9,842	9,857	9,834	9,893	9,926	9,951	9,873	9,903	0	0	9,945	9,883
SIOUX 2	9,841	9,801	9,833	9,810	9,891	9,895	9,886	9,871	9,907	9,881	9,866	9,838	9,859
VENICE CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2	10,838	11,334	10,847	0	10,830	0	10,714	10,797	0	0	0	10,787	10,784
VENICE CT3	10,539	10,649	11,329	0	10,740	10,610	10,597	10,677	10,710	0	11,271	10,666	10,636
VENICE CT4	10,555	10,792	11,353	0	10,732	10,614	10,631	10,670	10,671	0	11,651	10,683	10,660
VENICE CT5	12,961	12,985	0	0	0	0	12,140	12,706	0	0	0	13,191	12,685
VIADUCT CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	10,213	10,200	10,182	10,224	10,222	10,226	10,243	10,221	10,211	10,183	10,223	10,231	10,215
Units													
Coal	10,260	10,249	10,235	10,226	10,250	10,283	10,297	10,271	10,272	10,252	10,302	10,286	10,265
Nuclear	9,983	9,984	9,984	9,984	10,006	9,984	9,984	9,984	9,984	9,984	9,984	9,984	9,985
CT	11,079	11,190	11,222	10,791	11,060	10,816	10,981	10,965	10,940	10,683	11,272	11,176	11,031

Sched #3
- Lab #1 outage Hrs 2307
6729
9,036

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Hours Connected To Load
Page: 1

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0	0	0	0	0	0	0	1	0	0	0	0	1
AUDRAIN CT2	0	0	0	0	0	0	0	1	0	0	0	0	1
AUDRAIN CT3	0	0	0	0	0	0	0	1	0	0	0	0	1
AUDRAIN CT4	0	0	0	0	0	0	0	1	0	0	0	0	1
AUDRAIN CT5	0	0	0	0	0	0	0	1	0	0	0	0	1
AUDRAIN CT6	0	0	0	0	0	0	0	1	0	0	0	0	1
AUDRAIN CT7	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1	744	672	744	24	384	720	744	744	720	744	720	744	7704
FAIRGROUNDS GT	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT1	2	1	0	0	0	0	8	6	0	0	0	8	25
GOOSE CREEK CT2	2	1	0	0	0	0	8	6	1	0	0	7	24
GOOSE CREEK CT3	1	1	0	0	0	0	8	4	0	0	0	8	20
GOOSE CREEK CT4	1	1	0	0	1	0	7	3	0	0	0	4	16
GOOSE CREEK CT5	1	1	0	0	0	0	7	1	0	0	0	3	12
GOOSE CREEK CT6	1	1	0	0	0	0	5	3	0	0	0	3	12
HOWARD BEND CT	0	0	0	0	0	0	0	0	0	0	0	0	0
KINMUNDY CT 1	28	15	2	0	1	9	22	14	4	0	1	16	111
KINMUNDY CT 2	22	14	1	0	1	9	21	11	3	0	1	16	99
KIRKSVILLE CT	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 1	743	668	744	720	695	674	738	709	377	0	0	662	6729
LABADIE 2	726	670	709	720	744	703	682	693	711	730	712	732	8531
LABADIE 3	744	607	708	664	731	670	632	708	684	681	680	742	8250
LABADIE 4	698	661	732	720	720	692	719	660	705	686	701	695	8390
MERAMEC 1	723	641	222	0	296	710	728	602	651	704	693	742	6713
MERAMEC 2	719	649	721	658	740	688	737	736	702	713	677	744	8484
MERAMEC 3	714	530	723	633	644	625	667	678	359	204	627	690	7094
MERAMEC 4	702	637	708	714	635	703	700	721	715	312	496	697	7740
MERAMEC CT1	0	0	0	0	0	0	0	1	0	0	0	0	1
MERAMEC CT2	0	0	0	0	0	0	0	2	0	0	0	2	4
MEXICO CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MOBERLY CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MOREAU CT	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT1	48	28	9	0	11	31	65	50	12	4	4	34	296
PENO CREEK CT2	47	28	9	0	9	31	65	48	11	4	4	34	289
PENO CREEK CT3	46	28	9	0	8	31	64	46	10	4	4	33	283
PENO CREEK CT4	44	28	9	0	7	31	64	44	10	4	4	33	277
PINCKNEY CT1	80	44	16	3	17	73	100	78	23	8	10	72	523
PINCKNEY CT2	79	44	15	3	15	73	99	77	22	8	10	72	517
PINCKNEY CT3	79	44	15	3	15	73	99	76	22	7	10	71	512
PINCKNEY CT4	78	44	15	3	14	72	98	74	21	7	10	71	507
PINCKNEY CT5	6	6	1	0	0	0	6	3	0	0	1	10	32
PINCKNEY CT6	4	5	1	0	0	0	6	3	0	0	1	10	29
PINCKNEY CT7	3	5	1	0	0	0	6	3	0	0	1	9	28

PINCKNEY CT8	3	5	1	0	0	0	6	2	0	0	1	8	26
RACCOON CRK CT1	26	17	8	0	8	24	52	37	8	0	2	20	203
RACCOON CRK CT2	20	14	8	0	6	22	52	30	7	0	2	21	181
RACCOON CRK CT4	22	14	6	0	4	22	49	29	7	0	2	18	173
RUSH ISLAND 1	739	405	0	666	581	664	673	686	645	720	500	708	6988
RUSH ISLAND 2	718	656	663	713	721	676	663	735	713	726	678	718	8381
SIOUX 1	701	655	661	645	648	579	572	714	630	0	0	448	6254
SIOUX 2	739	637	730	663	639	713	721	676	670	678	708	716	8289
VENICE CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2	6	0	3	0	2	0	13	4	0	0	0	36	64
VENICE CT3	29	11	2	0	6	14	32	23	3	0	1	34	156
VENICE CT4	24	10	2	0	5	13	31	19	3	0	1	33	140
VENICE CT5	0	0	0	0	0	0	4	1	0	0	0	5	11
VIADUCT CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro Units													
KEOKUK	736	672	736	720	736	720	736	736	720	736	720	736	8704
OSAGE	240	256	304	336	352	400	272	224	240	224	208	208	3264
Total	11089	9424	9236	8608	9393	10465	10979	10723	9408	7905	8190	10673	116092
Units													
Coal	8667	7415	7321	7516	7793	8098	8232	8319	7562	6154	6473	8293	91842
Nuclear	744	672	744	24	384	720	744	744	720	744	720	744	7704
CT	702	409	131	12	128	527	995	701	166	47	69	692	4578
Hydros	976	928	1040	1056	1088	1120	1008	960	960	960	928	944	11968

Ameren MPSC 0140
Ameren Benchmark Run
Original
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RealTime

Forced Outage Hours
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Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	27	38	21	52	40	39	42	6	36	36	40	23	402
AUDRAIN CT2	42	23	41	35	10	50	29	17	58	29	39	29	402
AUDRAIN CT3	30	23	56	31	34	49	44	31	35	59	26	64	481
AUDRAIN CT4	30	9	68	51	33	16	23	47	19	40	17	29	382
AUDRAIN CT5	65	23	24	34	23	34	12	59	35	50	34	44	434
AUDRAIN CT6	24	54	26	50	55	34	20	42	45	38	30	14	432
AUDRAIN CT7	6	39	17	29	50	47	29	45	55	25	48	56	446
AUDRAIN CT8	68	5	57	35	29	48	25	55	27	13	46	51	459
CALLAWAY 1	0	0	0	0	0	0	0	0	0	0	0	0	0
FAIRGROUNDS GT	32	27	62	18	55	32	26	51	55	50	27	56	491
GOOSE CREEK CT1	31	29	33	21	47	29	14	30	39	27	36	57	392
GOOSE CREEK CT2	4	30	16	54	10	28	20	32	59	20	30	35	340
GOOSE CREEK CT3	28	27	15	33	42	64	27	75	40	46	22	19	436
GOOSE CREEK CT4	29	13	61	57	22	51	34	39	31	35	20	33	425
GOOSE CREEK CT5	71	24	37	23	45	30	9	64	14	80	66	36	498
GOOSE CREEK CT6	41	8	38	38	30	43	45	25	41	29	72	43	451
HOWARD BEND CT	72	19	57	50	41	44	50	59	60	14	31	45	541
KINMUNDY CT 1	0	0	0	0	0	0	0	0	0	0	0	0	0
KINMUNDY CT 2	0	0	0	0	0	0	0	0	0	0	0	0	0
KIRKSVILLE CT	67	18	41	57	60	43	65	8	41	51	65	44	560
LABADIE 1	118	170	95	104	206	76	104	76	35	0	0	175	1160
LABADIE 2	108	94	122	227	127	213	234	189	158	78	27	203	1778
LABADIE 3	117	115	131	80	48	142	209	53	71	119	105	82	1271
LABADIE 4	125	72	55	51	136	65	113	172	108	110	21	66	1094
MERAMEC 1	102	112	32	0	56	7	94	146	175	183	108	18	1033
MERAMEC 2	117	43	75	114	40	58	88	223	143	173	156	37	1267
MERAMEC 3	44	194	100	161	306	104	174	185	56	92	147	126	1689
MERAMEC 4	191	195	75	217	247	171	171	186	250	29	138	321	2190
MERAMEC CT1	14	31	51	25	67	42	11	88	31	38	13	29	438
MERAMEC CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
MEXICO CT	24	102	29	55	54	2	33	38	45	56	33	51	522
MOBERLY CT	78	36	35	55	46	15	65	71	47	31	20	65	564
MOREAU CT	22	25	27	82	30	27	45	58	28	76	14	11	445
PENO CREEK CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT6	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT7	0	0	0	0	0	0	0	0	0	0	0	0	0

PINCKNEY CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
RACCOON CRK CT1	36	34	36	33	74	21	19	32	26	26	29	53	419
RACCOON CRK CT2	48	41	64	14	43	39	37	35	33	11	55	14	433
RACCOON CRK CT4	42	42	30	62	8	33	46	33	43	36	60	65	500
RUSH ISLAND 1	145	235	3	63	170	53	99	165	81	28	236	43	1321
RUSH ISLAND 2	89	105	93	157	195	62	207	50	122	48	58	229	1414
SIOUX 1	82	142	155	107	91	149	240	99	105	0	0	183	1353
SIOUX 2	27	37	88	55	122	9	42	69	71	110	34	24	687
VENICE CT1	77	33	61	5	25	50	82	52	32	35	82	98	631
VENICE CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
VIADUCT CT1	43	30	21	28	38	77	54	65	90	54	93	0	593
Total	2315	2294	2048	2363	2756	2095	2679	2767	2440	1974	2075	2568	28376
Units													
Coal	1266	1513	1025	1336	1744	1109	1775	1612	1375	970	1029	1506	16259
CT	1049	781	1023	1027	1012	987	905	1155	1066	1004	1046	1062	12117

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RealTime

Planned Outage Hours
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Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT6	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT7	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1	0	0	0	696	336	0	0	0	0	0	0	0	1032
FAIRGROUNDS GT	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT6	0	0	0	0	0	0	0	0	0	0	0	0	0
HOWARD BEND CT	0	0	0	0	0	0	0	0	0	0	0	0	0
KINMUNDY CT 1	0	0	0	0	0	0	0	0	0	0	0	0	0
KINMUNDY CT 2	0	0	0	0	0	0	0	0	0	0	0	0	0
KIRKSVILLE CT	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 1	0	0	0	0	0	0	0	0	336	744	720	72	1872
LABADIE 2	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 3	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 4	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC 1	0	0	480	720	432	0	0	0	0	0	0	0	1632
MERAMEC 2	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC 3	0	0	0	0	0	0	0	0	336	456	0	0	792
MERAMEC 4	0	0	0	0	0	0	0	0	0	432	192	0	624
MERAMEC CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
MEXICO CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MOBERLY CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MOREAU CT	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT6	0	0	0	0	0	0	0	0	0	0	0	0	0
PINCKNEY CT7	0	0	0	0	0	0	0	0	0	0	0	0	0

PINCKNEY CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
RACCOON CRK CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
RACCOON CRK CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
RACCOON CRK CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
RUSH ISLAND 1	0	210	741	0	0	0	0	0	0	0	0	0	951
RUSH ISLAND 2	0	0	0	0	0	0	0	0	0	0	0	0	0
SIOUX 1	0	0	0	0	0	0	0	0	0	744	720	168	1632
SIOUX 2	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
VIADUCT CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	210	1221	1416	768	0	0	0	672	2376	1632	240	8535
Units													
Coal	0	210	1221	720	432	0	0	0	672	2376	1632	240	7503
Nuclear	0	0	0	696	336	0	0	0	0	0	0	0	1032

Apr May

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Generating Units													
AUDRAIN CT1	96.371	94.345	97.312	92.778	94.624	94.583	94.355	99.194	95.000	95.161	94.444	96.909	95.445
AUDRAIN CT2	94.355	96.726	94.489	95.139	98.656	93.056	96.102	97.715	91.944	96.102	94.722	96.102	95.434
AUDRAIN CT3	95.968	96.577	92.473	95.694	95.430	93.194	94.086	95.833	95.139	92.070	96.389	91.398	94.498
AUDRAIN CT4	95.968	98.661	90.860	92.917	95.565	97.778	96.909	93.683	97.361	94.624	97.639	96.102	95.639
AUDRAIN CT5	91.263	96.577	96.774	95.278	96.909	95.278	98.387	92.070	95.139	93.280	95.278	94.086	95.011
AUDRAIN CT6	96.774	91.964	96.505	93.056	92.608	95.278	97.312	94.355	93.750	94.892	95.833	98.118	95.068
AUDRAIN CT7	99.194	94.345	97.715	95.972	93.280	93.611	96.102	93.952	92.361	96.640	93.333	92.473	94.932
AUDRAIN CT8	90.860	99.256	92.339	95.139	96.102	93.333	96.640	92.608	96.250	98.253	93.611	93.145	94.760
CALLAWAY 1	100.000	100.000	100.000	3.333	54.839	100.000	100.000	100.000	100.000	100.000	100.000	100.000	88.219
FAIRGROUNDS GT	95.699	95.982	91.667	97.500	92.608	95.556	96.505	93.145	92.500	93.280	96.250	92.473	94.406
GOOSE CREEK CT1	95.833	95.685	95.565	97.083	93.683	95.972	98.118	95.968	94.583	96.371	95.000	92.339	95.514
GOOSE CREEK CT2	99.462	95.536	97.849	92.500	98.656	96.111	97.312	95.699	91.806	97.312	95.833	95.296	96.142
GOOSE CREEK CT3	96.237	95.982	97.984	95.417	94.355	91.111	96.505	89.919	94.444	93.817	96.944	97.446	95.011
GOOSE CREEK CT4	96.102	98.065	91.801	92.083	97.043	92.917	95.430	94.758	95.694	95.296	97.222	95.699	95.160
GOOSE CREEK CT5	90.591	96.429	95.027	96.806	93.952	95.833	98.790	91.398	98.056	89.247	90.833	95.161	94.315
GOOSE CREEK CT6	94.489	98.810	94.892	94.722	95.968	94.028	93.952	96.640	94.306	96.102	90.000	94.355	94.840
HOWARD BEND CT	90.323	97.173	92.339	93.056	94.489	93.889	93.280	92.070	91.667	98.118	95.694	93.952	93.813
KINMUNDY CT 1	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
KINMUNDY CT 2	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
KIRKSVILLE CT	91.129	97.321	94.489	92.083	91.935	94.028	91.263	98.925	94.306	93.145	90.972	94.086	93.619
LABADIE 1	94.710	92.522	95.772	95.771	88.933	92.681	95.148	94.124	51.247	0.000	0.000	83.158	73.668
LABADIE 2	94.001	94.433	91.847	90.732	93.937	87.509	83.281	89.090	92.651	95.425	97.956	91.193	91.813
LABADIE 3	94.449	88.182	91.196	92.019	97.008	89.211	81.491	94.804	93.852	90.158	91.937	96.330	91.748
LABADIE 4	90.277	94.902	96.504	97.360	92.044	94.627	91.872	84.411	93.092	90.597	97.523	93.221	92.992
MERAMEC 1	95.375	93.820	31.277	0.000	39.969	99.028	95.961	82.378	87.030	91.631	94.226	99.529	75.767
MERAMEC 2	94.331	96.471	96.471	91.269	98.665	95.384	97.220	93.571	94.685	92.372	91.767	99.030	95.112
MERAMEC 3	95.951	79.424	94.756	85.530	78.751	88.756	87.132	86.686	48.644	29.133	86.245	90.548	79.317
MERAMEC 4	89.861	88.507	94.436	90.572	81.672	91.294	90.035	90.419	90.798	40.771	64.686	83.408	82.979
MERAMEC CT1	98.118	95.387	93.145	96.528	90.995	94.167	98.522	88.172	95.694	94.892	98.194	96.102	94.977
MERAMEC CT2	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
MEXICO CT	96.774	84.821	96.102	92.361	92.742	99.722	95.565	94.892	93.750	92.473	95.417	93.145	94.041
MOBERLY CT	89.516	94.643	95.430	92.361	93.817	97.917	91.263	90.457	93.472	95.833	97.222	91.263	93.573
MOREAU CT	97.043	96.280	96.371	88.611	95.968	96.250	93.952	92.204	96.111	89.785	98.056	98.522	94.920
PENO CREEK CT1	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PENO CREEK CT2	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PENO CREEK CT3	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PENO CREEK CT4	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PINCKNEY CT1	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PINCKNEY CT2	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PINCKNEY CT3	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PINCKNEY CT4	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PINCKNEY CT5	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PINCKNEY CT6	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
PINCKNEY CT7	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000

PINCKNEY CT8	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
RACCOON CRK CT1	95.161	94.940	95.161	95.417	90.054	97.222	97.581	95.699	96.389	96.505	95.972	92.876	95.240
RACCOON CRK CT2	93.548	93.899	91.398	98.056	94.220	94.722	95.027	95.296	95.417	98.522	92.361	98.118	95.057
RACCOON CRK CT4	94.355	93.750	95.968	91.389	98.925	95.417	93.817	95.565	94.028	95.161	91.667	91.263	94.292
RUSH ISLAND 1	91.833	50.104	0.000	93.001	78.202	92.904	89.881	87.685	89.879	96.672	69.476	95.254	78.044
RUSH ISLAND 2	93.949	93.092	88.755	91.783	88.360	93.598	83.864	97.121	93.532	96.487	93.795	87.397	91.786
SIOUX 1	93.521	93.290	86.256	88.367	88.563	81.018	75.404	93.706	88.100	0.000	0.000	58.804	70.467
SIOUX 2	98.613	95.090	96.014	92.690	86.106	99.214	96.521	91.905	93.279	90.536	97.541	96.974	94.523
VENICE CT1	89.651	95.089	91.801	99.306	96.640	93.056	88.978	93.011	95.556	95.296	88.611	86.828	92.785
VENICE CT2	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
VENICE CT3	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
VENICE CT4	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
VENICE CT5	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
VIADUCT CT1	94.220	95.536	97.177	96.111	94.892	89.306	92.742	91.263	87.500	92.742	87.083	100.000	93.231
Units													
Coal	93.906	88.320	80.274	84.091	84.351	92.102	88.984	90.492	84.732	67.815	73.763	89.571	84.851
Nuclear	100.000	100.000	100.000	3.333	54.839	100.000	100.000	100.000	100.000	100.000	100.000	100.000	88.219
CT	96.867	97.417	96.947	96.830	96.980	96.963	97.300	96.544	96.716	96.998	96.769	96.828	96.927

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Forced Outage Rate
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rDate: 12-12-2006
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Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Generating Units													
AUDRAIN CT1	3.688	5.655	2.755	7.266	5.418	5.417	5.704	0.832	5.043	4.830	5.556	3.142	4.587
AUDRAIN CT2	5.612	3.348	5.536	4.913	1.344	6.953	3.948	2.335	8.082	3.889	5.347	3.856	4.588
AUDRAIN CT3	4.032	3.423	7.510	4.340	4.612	6.771	5.889	4.116	4.896	7.871	3.637	8.577	5.496
AUDRAIN CT4	4.007	1.339	9.106	7.127	4.419	2.214	3.108	6.376	2.604	5.418	2.309	3.906	4.361
AUDRAIN CT5	8.695	3.404	3.192	4.688	3.041	4.714	1.554	7.897	4.818	6.662	4.740	5.872	4.954
AUDRAIN CT6	3.192	8.045	3.528	6.910	7.384	4.688	2.730	5.586	6.293	5.082	4.149	1.924	4.928
AUDRAIN CT7	0.840	5.729	2.344	3.993	6.678	6.458	3.915	6.082	7.682	3.369	6.606	7.560	5.088
AUDRAIN CT8	9.089	0.698	7.644	4.861	3.864	6.727	3.402	7.443	3.811	1.689	6.337	6.880	5.238
CALLAWAY 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FAIRGROUNDS GT	4.259	4.046	8.359	2.517	7.426	4.497	3.427	6.863	7.588	6.762	3.750	7.527	5.621
GOOSE CREEK CT1	4.192	4.288	4.377	2.908	6.334	3.993	1.831	4.032	5.382	3.654	5.061	7.644	4.478
GOOSE CREEK CT2	0.504	4.511	2.184	7.552	1.386	3.915	2.697	4.309	8.177	2.688	4.210	4.713	3.876
GOOSE CREEK CT3	3.738	4.027	1.957	4.566	5.670	8.906	3.562	10.089	5.556	6.132	2.995	2.554	4.981
GOOSE CREEK CT4	3.940	1.869	8.224	7.865	3.007	7.127	4.553	5.250	4.323	4.671	2.769	4.368	4.847
GOOSE CREEK CT5	9.476	3.590	4.940	3.142	6.048	4.167	1.235	8.577	1.997	10.761	9.149	4.822	5.687
GOOSE CREEK CT6	5.477	1.190	5.040	5.260	4.032	6.033	6.057	3.352	5.686	3.856	9.939	5.712	5.151
HOWARD BEND CT	9.635	2.799	7.686	6.970	5.460	6.059	6.779	7.888	8.317	1.941	4.306	6.057	6.162
KINMUNDY CT 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
KINMUNDY CT 2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
KIRKSVILLE CT	8.938	2.697	5.561	7.925	8.090	6.007	8.703	1.033	5.738	6.897	9.036	5.761	6.385
LABADIE 1	5.281	7.413	4.228	4.238	11.100	7.371	4.885	5.843	2.121	0.000	0.000	7.165	4.967
LABADIE 2	6.007	5.604	8.128	9.268	6.063	12.551	16.669	10.851	7.410	4.567	1.992	8.773	8.182
LABADIE 3	5.551	11.892	8.770	7.938	3.026	10.729	18.476	5.255	6.148	9.816	8.063	3.704	8.252
LABADIE 4	9.698	5.060	3.546	2.640	7.914	5.390	8.120	15.597	6.890	9.445	2.529	6.728	7.007
MERAMEC 1	4.583	6.199	4.157	0.000	1.967	0.938	3.980	17.639	12.936	8.369	5.801	0.521	5.593
MERAMEC 2	5.619	3.594	3.487	8.748	1.352	4.642	2.830	6.379	5.289	7.603	8.198	0.970	4.883
MERAMEC 3	4.083	20.548	5.302	14.453	21.291	11.287	12.893	13.364	4.646	9.618	13.799	9.502	11.667
MERAMEC 4	10.097	11.567	5.581	9.446	18.353	8.689	9.923	9.556	9.263	1.165	8.665	16.575	9.903
MERAMEC CT1	1.907	4.585	6.821	3.438	8.947	5.844	1.462	11.803	4.212	5.049	1.762	3.873	4.976
MERAMEC CT2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MEXICO CT	3.226	15.123	3.889	7.622	7.308	0.265	4.385	5.057	6.316	7.552	4.644	6.815	5.976
MOBERLY CT	10.484	5.301	4.637	7.648	6.233	2.071	8.745	9.518	6.572	4.200	2.708	8.604	6.406
MOREAU CT	2.940	3.776	3.663	11.398	4.074	3.833	6.090	7.745	3.899	10.165	1.944	1.439	5.072
PENO CREEK CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PENO CREEK CT2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PENO CREEK CT3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PENO CREEK CT4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PINCKNEY CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PINCKNEY CT2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PINCKNEY CT3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PINCKNEY CT4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PINCKNEY CT5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PINCKNEY CT6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PINCKNEY CT7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PINCKNEY CT8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RACCOON CRK CT1	4.872	5.078	4.872	4.618	9.896	2.847	2.487	4.335	3.628	3.528	4.010	7.166	4.787
RACCOON CRK CT2	6.443	6.092	8.619	1.953	5.780	5.347	4.914	4.654	4.644	1.512	7.639	1.831	4.944
RACCOON CRK CT4	5.696	6.278	4.032	8.611	1.075	4.609	6.200	4.444	5.911	4.805	8.359	8.686	5.708
RUSH ISLAND 1	8.117	18.692	0.386	6.964	21.798	7.149	10.119	12.315	10.069	3.337	30.541	4.695	11.093
RUSH ISLAND 2	6.026	6.843	11.262	8.165	11.598	6.341	16.194	2.913	6.468	3.580	6.249	12.595	8.212
SIOUX 1	6.453	6.701	13.711	11.642	11.437	19.016	24.613	6.344	11.935	0.000	0.000	18.556	10.904
SIOUX 2	1.328	4.929	3.977	7.319	13.827	0.777	3.420	8.112	6.695	9.456	2.442	3.026	5.459
VENICE CT1	10.375	4.874	8.174	0.677	3.335	6.962	10.980	6.972	4.445	4.696	11.389	13.261	7.277
VENICE CT2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
VENICE CT3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
VENICE CT4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
VENICE CT5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
VIADUCT CT1	5.780	4.416	2.881	3.898	5.099	10.694	7.258	8.686	12.431	7.300	12.951	0.000	6.745
Units													
Coal	6.259	9.131	6.392	7.552	11.339	8.484	12.157	8.939	7.226	5.178	7.170	8.320	8.177
Nuclear	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CT	2.875	2.508	2.936	3.117	2.883	2.896	2.365	3.300	3.089	2.869	2.970	3.049	2.907

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Cost (Mills/KWH)
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rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Generating Units													
AUDRAIN CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	84.003	0.000	0.000	0.000	0.000	84.003
AUDRAIN CT2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	83.298	0.000	0.000	0.000	0.000	83.298
AUDRAIN CT3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	84.984	0.000	0.000	0.000	0.000	84.984
AUDRAIN CT4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	84.393	0.000	0.000	0.000	0.000	84.393
AUDRAIN CT5	0.000	0.000	0.000	0.000	0.000	0.000	0,000	84.175	0.000	0.000	0.000	0.000	84.175
AUDRAIN CT6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	84.843	0.000	0.000	0.000	96.660	87.584
AUDRAIN CT7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	86.579	0.000	0.000	0.000	0.000	86.579
AUDRAIN CT8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CALLAWAY 1	4.509	4.510	4.520	4.530	4.580	4.590	4.620	4.610	4.570	4.550	4.520	4.510	4.552
FAIRGROUNDS GT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	111.195	0.000	0.000	0.000	0.000	111.195
GOOSE CREEK CT1	68.771	82.057	0.000	0.000	75.187	0.000	73.975	78.757	0.000	0.000	0.000	93.607	81.022
GOOSE CREEK CT2	70.467	81.098	0.000	0.000	75.542	0.000	73.975	78.358	77.168	0.000	0.000	93.872	80.378
GOOSE CREEK CT3	70.776	82.547	0.000	0.000	0.000	0.000	73.991	78.044	0.000	0.000	0.000	94.195	81.765
GOOSE CREEK CT4	69.727	81.098	0.000	0.000	75.566	0.000	74.018	78.283	0.000	0.000	0.000	95.744	80.211
GOOSE CREEK CT5	69.650	81.098	0.000	0.000	0.000	0.000	73.936	79.121	0.000	0.000	0.000	96.290	79.166
GOOSE CREEK CT6	72.226	82.911	0.000	0.000	0.000	0.000	73.936	78.618	0.000	0.000	0.000	95.728	80.653
HOWARD BEND CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	125.049	0.000	0.000	0.000	0.000	125.049
KINMUNDY CT 1	64.987	70.298	88.622	0.000	79.511	74.874	74.980	79.869	80.962	0.000	83.707	87.854	74.950
KINMUNDY CT 2	64.611	70.337	88.336	0.000	78.482	74.853	74.987	79.955	80.850	0.000	83.707	87.592	75.064
KIRKSVILLE CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	163.290	0.000	0.000	0.000	0.000	163.290
LABADIE 1	12.520	12.539	12.524	12.526	12.530	12.546	12.516	12.567	12.563	0.000	0.000	12.598	12.541
LABADIE 2	12.560	12.533	12.596	12.514	12.524	12.556	12.609	12.612	12.561	12.580	12.536	12.543	12.560
LABADIE 3	12.365	12.390	12.386	12.467	12.374	12.415	12.444	12.396	12.386	12.436	12.400	12.385	12.403
LABADIE 4	12.431	12.385	12.386	12.364	12.397	12.396	12.402	12.444	12.379	12.438	12.394	12.467	12.406
MERAMEC 1	15.535	15.534	15.626	0.000	15.726	15.578	15.608	15.623	15.708	15.804	15.641	15.618	15.630
MERAMEC 2	15.456	15.485	15.568	15.534	15.530	15.548	15.533	15.585	15.617	15.726	15.645	15.575	15.566
MERAMEC 3	15.342	15.464	15.438	15.443	15.491	15.514	15.442	15.477	15.484	15.820	15.504	15.513	15.472
MERAMEC 4	15.756	15.717	15.763	15.718	15.853	15.802	15.785	15.785	15.793	15.845	15.900	15.878	15.793
MERAMEC CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	109.859	0.000	0.000	0.000	0.000	109.859
MERAMEC CT2	0.000	97.773	0.000	0.000	0.000	0.000	0.000	84.592	0.000	0.000	0.000	93.945	90.294
MEXICO CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	122.153	0.000	0.000	0.000	0.000	122.153
MOBERLY CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	114.280	0.000	0.000	0.000	0.000	114.280
MOREAU CT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	112.245	0.000	0.000	0.000	0.000	112.245
PENO CREEK CT1	60.044	64.623	75.140	0.000	68.512	67.411	65.556	70.001	72.274	87.683	84.330	80.383	68.424
PENO CREEK CT2	60.158	64.633	75.140	0.000	68.182	67.438	65.591	70.051	72.324	87.953	84.360	80.320	68.456
PENO CREEK CT3	60.280	64.650	75.151	0.000	68.283	67.422	65.582	70.049	72.236	87.699	84.330	80.379	68.469
PENO CREEK CT4	60.413	64.688	75.217	0.000	68.389	67.452	65.555	70.143	72.238	87.734	84.330	80.584	68.560
PINCKNEY CT1	55.297	59.870	71.867	64.542	65.598	63.408	62.749	66.156	68.466	80.339	70.486	75.107	64.641
PINCKNEY CT2	55.275	59.876	71.474	64.542	65.493	63.431	62.733	66.166	68.372	80.323	70.486	75.041	64.609
PINCKNEY CT3	55.242	59.879	71.560	64.542	65.569	63.430	62.732	66.182	68.242	80.290	70.486	75.066	64.609
PINCKNEY CT4	55.324	59.879	71.602	64.542	65.618	63.374	62.707	66.102	68.223	80.290	70.486	75.043	64.586
PINCKNEY CT5	73.471	77.711	94.042	0.000	83.553	0.000	82.361	88.521	0.000	0.000	89.831	94.517	85.059
PINCKNEY CT6	73.994	77.734	94.042	0.000	84.713	0.000	82.106	88.407	0.000	0.000	89.831	94.670	85.384
PINCKNEY CT7	72.845	78.235	99.214	0.000	88.337	0.000	82.116	87.840	0.000	0.000	89.831	95.825	85.875

PINCKNEY CT8	72.185	77.782	94.042	0.000	86.322	0.000	82.320	87.744	0.000	0.000	89.831	94.659	85.296
RACCOON CRK CT1	66.614	71.514	83.202	0.000	75.810	74.362	73.029	77.800	77.805	0.000	88.183	89.292	75.545
RACCOON CRK CT2	67.034	71.721	82.879	0.000	76.258	74.248	72.945	77.691	77.764	0.000	88.183	89.453	75.843
RACCOON CRK CT4	66.749	71.772	83.489	0.000	76.314	74.273	72.958	77.871	77.677	0.000	88.183	89.598	75.535
RUSH ISLAND 1	16.653	16.849	0.000	16.647	16.656	16.723	16.769	16.725	16.766	16.635	16.969	16.652	16.718
RUSH ISLAND 2	16.652	16.667	16.562	16.629	16.828	16.817	16.810	16.653	16.734	16.725	16.703	16.862	16.718
SIOUX 1	16.563	16.529	16.575	16.513	16.680	16.722	16.823	16.585	16.663	0.000	0.000	16.794	16.632
SIOUX 2	16.512	16.451	16.504	16.467	16.625	16.612	16.611	16.596	16.654	16.592	16.559	16.521	16.556
VENICE CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
VENICE CT2	63.704	89.052	79.203	0.000	69.327	0.000	68.935	72.878	0.000	0.000	0.000	78.652	74.701
VENICE CT3	59.108	67.556	89.634	0.000	68.698	68.452	67.571	71.998	77.020	0.000	87.459	78.006	69.458
VENICE CT4	59.391	68.731	89.831	0.000	68.446	68.487	67.839	72.013	76.895	0.000	91.408	78.157	69.955
VENICE CT5	75.351	83.723	0.000	0.000	0.000	0.000	77.450	85.422	0.000	0.000	0.000	98.189	87.377
VIADUCT CT1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pumped Storage	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hydro Units													
KEOKUK	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OSAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Purchases													
APL FIXED-F	12.510	12.510	12.510	12.510	12.510	12.510	12.510	12.510	12.510	12.510	12.510	12.510	12.510
APL FIXED-E	12.510	12.510	0.000	0.000	0.000	12.510	12.510	12.510	12.510	0.000	0.000	12.510	12.510
PURCHASES	30.733	27.385	34.437	51.498	48.660	61.023	52.431	60.712	53.482	48.625	31.169	31.759	54.252
Sales													
SALES (B)	39.171	38.047	40.883	35.794	.30.095	35.375	37.891	35.219	31.552	32.121	31.435	41.454	36.200
SALES (O)	35.265	35.571	33.099	24.282	25.719	28.082	21.045	20.446	24.268	19.256	19.488	33.629	30.805
Average	18.089	17.009	17.826	18.489	16.278	16.003	15.491	15.847	15.224	14.518	14.742	17.114	16.468
Units	13.006	12.750	12.283	14.460	13.411	12.969	13.361	13.190	12.622	12.046	12.099	13.118	12.949
Coal	14.586	14.499	14.304	14.537	14.503	14.630	14.635	14.647	14.694	14.637	14.575	14.595	14.569
Nuclear	4.509	4.510	4.520	4.530	4.580	4.590	4.620	4.610	4.570	4.550	4.520	4.510	4.552
CT	60.180	66.116	77.873	64.542	69.263	67.588	68.003	71.825	72.918	83.318	78.874	81.243	69.915
Storage	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hydros	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Purchases	12.529	12.655	12.669	12.814	23.267	20.542	28.497	33.887	21.319	15.026	13.199	13.326	19.747
Sales	18.225	17.084	17.909	18.521	16.314	16.040	15.492	15.850	15.239	14.519	14.744	17.174	16.514

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	53,742	47,550	54,263	50,077	52,777	51,075	52,617	55,284	51,277	53,105	51,000	54,047	626,812
AUDRAIN CT2	52,669	48,713	52,711	51,347	55,050	50,245	53,597	54,447	49,636	53,630	51,113	53,648	626,805
AUDRAIN CT3	53,550	48,675	51,609	51,656	53,227	50,344	52,514	53,456	51,356	51,408	52,036	51,014	620,845
AUDRAIN CT4	53,564	49,725	50,719	50,152	53,334	52,805	54,066	52,199	52,594	52,777	52,753	53,620	628,307
AUDRAIN CT5	50,948	48,684	54,019	51,469	54,103	51,455	54,933	51,354	51,398	52,083	51,441	52,523	624,411
AUDRAIN CT6	54,019	46,345	53,831	50,269	51,680	51,469	54,277	52,644	50,602	52,964	51,759	54,715	624,573
AUDRAIN CT7	55,331	47,513	54,492	51,844	52,073	50,513	53,616	52,378	49,852	53,920	50,433	51,581	623,545
AUDRAIN CT8	50,728	50,048	51,534	51,375	53,644	50,367	53,902	51,647	51,942	54,858	50,578	51,961	622,584
CALLAWAY 1	0	0	0	0	28,490	248	0	0	16	6	0	0	28,760
FAIRGROUNDS GT	39,177	35,465	37,500	38,603	37,881	37,819	39,518	38,102	37,260	40,234	40,194	40,636	462,389
GOOSE CREEK CT1	53,334	48,201	53,358	52,430	52,238	51,844	54,184	53,140	51,094	53,761	51,267	50,995	625,844
GOOSE CREEK CT2	55,415	48,091	54,581	49,922	55,000	51,886	53,701	52,975	49,544	54,300	51,727	52,732	629,873
GOOSE CREEK CT3	53,660	48,336	54,708	51,534	52,636	49,191	53,255	49,907	51,000	52,378	52,383	53,902	622,890
GOOSE CREEK CT4	53,551	49,426	51,211	49,753	54,084	50,152	52,773	52,635	51,666	53,194	52,505	53,095	624,043
GOOSE CREEK CT5	50,453	48,559	53,044	52,303	52,425	51,750	54,598	50,945	52,922	49,795	49,059	52,923	618,776
GOOSE CREEK CT6	52,706	49,772	52,988	51,159	53,550	50,742	52,068	53,749	50,930	53,648	48,633	52,414	622,359
HOWARD BEND CT	28,909	28,087	29,533	28,802	30,245	29,084	29,823	29,463	28,825	32,830	31,005	31,700	358,307
KINMUNDY CT 1	81,378	74,455	83,934	81,360	83,975	81,080	83,894	84,859	82,422	84,072	81,265	82,166	984,859
KINMUNDY CT 2	81,867	74,511	83,950	81,360	84,024	81,093	83,965	85,153	82,440	84,072	81,265	82,222	985,921
KIRKSVILLE CT	8,808	8,500	9,134	8,618	8,890	8,798	8,830	9,567	8,823	9,005	8,514	9,364	106,851
LABADIE 1	31,747	24,590	26,399	27,885	36,213	46,792	42,021	43,154	29,138	0	0	40,895	348,833
LABADIE 2	30,291	22,988	28,213	23,685	34,896	39,857	39,365	43,182	48,117	47,332	45,230	37,708	440,866
LABADIE 3	23,622	17,134	19,704	24,657	29,750	32,785	31,874	32,733	38,081	38,082	32,275	30,190	350,887
LABADIE 4	18,359	13,001	12,191	11,665	21,278	32,548	28,879	26,892	31,726	31,471	28,833	32,180	289,023
MERAMEC 1	15,263	11,532	5,058	0	9,004	17,252	16,285	14,760	16,078	16,733	15,304	15,471	152,740
MERAMEC 2	13,252	10,808	12,138	12,515	14,806	15,726	15,007	13,923	15,940	14,823	14,795	14,504	168,236
MERAMEC 3	15,713	11,633	7,282	9,470	18,833	25,499	19,914	17,706	14,118	10,073	20,442	18,360	189,042
MERAMEC 4	40,484	19,031	21,501	22,572	39,763	40,230	32,569	31,323	36,135	15,602	26,410	32,141	357,763
MERAMEC CT1	42,329	37,189	40,209	40,325	39,291	38,641	40,322	36,062	38,622	40,973	41,024	42,242	477,229
MERAMEC CT2	38,688	34,932	38,688	37,440	38,688	37,680	39,432	39,357	37,920	38,688	37,440	39,652	458,605
MEXICO CT	41,760	33,082	41,474	38,577	39,998	40,931	39,126	38,834	37,773	39,893	39,821	40,949	472,218
MOBERLY CT	38,628	36,910	41,151	38,566	40,462	40,190	37,342	37,016	37,670	41,340	40,629	40,163	470,066
MOREAU CT	41,883	37,504	41,572	37,000	41,394	39,467	38,428	37,741	38,748	38,766	40,948	43,312	476,762
PENO CREEK CT1	33,536	30,963	35,306	34,560	35,257	32,886	31,955	32,699	33,553	35,514	34,388	34,971	405,588
PENO CREEK CT2	33,608	30,963	35,306	34,560	35,314	32,891	31,974	32,817	33,596	35,519	34,388	34,984	405,919
PENO CREEK CT3	33,650	30,964	35,306	34,560	35,372	32,894	31,998	32,891	33,618	35,530	34,388	34,993	406,164
PENO CREEK CT4	33,752	30,968	35,308	34,560	35,422	32,897	32,029	32,964	33,630	35,530	34,388	35,032	406,480
PINCKNEY CT1	25,301	23,888	27,699	27,252	27,675	25,760	28,375	29,369	29,326	27,992	27,000	25,349	324,986
PINCKNEY CT2	25,326	23,889	27,717	27,252	27,714	25,773	28,416	29,433	29,351	27,992	27,000	25,355	325,217
PINCKNEY CT3	25,347	23,889	27,721	27,252	27,745	25,791	28,445	29,488	29,367	27,994	27,000	25,359	325,398
PINCKNEY CT4	25,370	23,889	27,728	27,252	27,779	25,802	28,471	29,550	29,383	27,994	27,000	25,376	325,594
PINCKNEY CT5	28,095	25,336	28,245	27,360	28,267	26,880	26,582	26,676	26,400	28,272	27,331	28,449	327,891
PINCKNEY CT6	28,126	25,345	28,245	27,360	28,268	26,880	26,586	26,693	26,400	28,272	27,331	28,463	327,968
PINCKNEY CT7	28,152	25,354	28,249	27,360	28,268	26,880	26,586	26,699	26,400	28,272	27,331	28,488	328,040

PINCKNEY CT8	28,165	25,356	28,250	27,360	28,270	26,880	26,588	26,705	26,400	28,272	27,331	28,499	328,075
RACCOON CRK CT1	51,312	46,718	52,527	51,506	49,726	50,714	50,642	50,793	51,475	53,831	51,702	50,440	611,387
RACCOON CRK CT2	50,884	46,367	50,437	52,945	52,171	49,486	49,312	51,095	51,001	54,956	49,755	53,406	611,815
RACCOON CRK CT4	51,131	46,256	53,123	49,350	54,945	49,948	48,757	51,265	50,328	53,119	49,354	49,751	607,328
RUSH ISLAND 1	34,762	13,462	0	32,084	42,620	58,697	56,218	45,979	61,078	55,899	44,317	51,118	496,233
RUSH ISLAND 2	37,317	28,629	27,313	28,468	41,835	55,609	47,276	48,218	53,455	53,896	50,718	43,326	516,060
SIOUX 1	28,119	9,554	17,914	15,723	40,728	44,070	38,363	28,661	41,523	0	0	29,120	293,774
SIOUX 2	27,141	10,855	17,369	15,762	40,581	48,069	42,181	38,000	47,286	38,012	34,391	28,401	388,047
VENICE CT1	16,670	15,981	17,080	17,878	17,980	16,747	16,558	17,303	17,659	19,145	17,226	18,111	208,337
VENICE CT2	36,173	32,911	36,341	35,280	36,386	35,040	35,102	35,523	34,800	36,456	35,280	35,844	425,137
VENICE CT3	128,350	118,543	131,347	124,560	127,738	121,463	120,590	122,226	122,124	128,712	124,431	124,943	1,495,027
VENICE CT4	129,217	118,899	131,371	124,560	128,031	121,486	120,907	122,808	122,175	128,712	124,445	125,205	1,497,814
VENICE CT5	83,322	75,230	83,592	81,360	84,072	82,080	85,861	86,178	82,800	84,072	81,360	83,360	993,287
VIADUCT CT1	18,927	17,342	19,509	18,682	19,064	17,361	18,630	18,343	17,024	18,622	16,922	20,880	221,306
Purchases													
APL FIXED-F	0	0	0	0	0	0	0	0	0	0	0	0	0
APL FIXED-E	12,314	4,160	0	2,400	22,240	21,891	5,191	6,238	12,000	0	0	3,826	90,260
PURCHASES	743,891	670,983	743,129	719,114	702,995	701,485	667,956	654,109	691,734	735,085	715,585	738,900	8,484,966
Total	3,173,786	2,787,682	3,068,827	3,004,752	3,250,164	3,215,913	3,168,241	3,129,307	3,189,547	3,193,486	3,092,441	3,224,976	37,499,121
Units	2,417,581	2,112,539	2,325,698	2,283,237	2,524,929	2,492,537	2,495,094	2,468,960	2,485,814	2,458,400	2,376,857	2,482,250	28,923,895
Coal	316,071	193,216	195,082	224,487	370,306	457,133	409,951	384,532	432,674	321,924	312,715	373,414	3,991,503
Nuclear	0	0	0	0	28,490	248	0	0	16	6	0	0	28,760
CT	2,101,510	1,919,323	2,130,616	2,058,751	2,126,133	2,035,157	2,085,143	2,084,429	2,053,124	2,136,471	2,064,142	2,108,836	24,903,632
Purchases	756,205	675,143	743,129	721,514	725,235	723,376	673,147	660,346	703,734	735,085	715,585	742,726	8,575,225

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Fuel Consumed
Page: 1

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AUDRAIN CT1 P:GAS TRKL	0	0	0	0	0	0	0	642	0	0	0	0	642
AUDRAIN CT2 P:GAS TRKL	0	0	0	0	0	0	0	603	0	0	0	0	603
AUDRAIN CT3 P:GAS TRKL	0	0	0	0	0	0	0	580	0	0	0	0	580
AUDRAIN CT4 P:GAS TRKL	0	0	0	0	0	0	0	531	0	0	0	0	531
AUDRAIN CT5 P:GAS TRKL	0	0	0	0	0	0	0	483	0	0	0	0	483
AUDRAIN CT6 P:GAS TRKL	0	0	0	0	0	0	0	476	0	0	0	150	626
AUDRAIN CT7 P:GAS TRKL	0	0	0	0	0	0	0	362	0	0	0	0	362
AUDRAIN CT8 P:GAS TRKL	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1 P:NUCLEAR	8,704,582	7,836,446	8,653,758	278,434	4,381,308	8,127,754	8,356,608	8,378,921	8,194,790	8,631,430	8,396,193	8,698,374	88,638,596
FAIRGROUNDS GT P:OIL MO	0	0	0	0	0	0	0	119	0	0	0	0	119
GOOSE CREEK CT1 P:GAS PEPL	1,624	547	0	0	334	0	7,217	5,035	0	0	0	6,904	21,660
GOOSE CREEK CT2 P:GAS PEPL	1,361	497	0	0	330	0	7,217	5,142	484	0	0	5,625	20,656
GOOSE CREEK CT3 P:GAS PEPL	713	484	0	0	0	0	6,772	3,204	0	0	0	6,090	17,263
GOOSE CREEK CT4 P:GAS PEPL	660	442	0	0	464	0	5,913	2,879	0	0	0	3,495	13,852
GOOSE CREEK CT5 P:GAS PEPL	774	442	0	0	0	0	6,228	856	0	0	0	2,454	10,754

GOOSE CREEK CT6													
P:GAS PEPL	501	401	0	0	0	0	4,282	2,216	0	0	0	2,593	9,992
HOWARD BEND CT													
P:OIL MO	0	0	0	0	0	0	0	81	0	0	0	0	81
KINMUNDY CT 1													
P:GAS NGP	33,604	18,432	1,829	0	1,256	12,134	29,235	17,787	4,662	0	1,243	20,349	140,530
KINMUNDY CT 2													
P:GAS NGP	27,347	17,744	1,605	0	618	11,970	28,386	14,185	4,427	0	1,243	19,590	127,116
KIRKSVILLE CT													
P:GAS MRT	0	0	0	0	0	0	0	118	0	0	0	0	118
LABADIE 1													
I:LAB COAL	159	952	0	159	793	952	0	1,586	793	0	0	2,538	7,931
I:OIL MO	159	952	0	159	793	952	0	1,586	793	0	0	2,538	7,931
P:LAB COAL	3,926,275	3,500,540	4,029,813	3,874,921	3,617,693	3,547,365	3,840,180	3,788,173	1,927,964	0	0	3,313,891	35,366,815
LABADIE 2													
I:LAB COAL	1,518	0	2,277	0	0	759	2,277	3,188	1,215	1,670	304	911	14,119
I:OIL MO	1,518	0	2,277	0	0	759	2,277	3,188	1,215	1,670	304	911	14,119
P:LAB COAL	3,896,711	3,582,513	3,825,695	3,683,527	3,847,647	3,383,843	3,331,962	3,548,338	3,519,919	3,789,389	3,784,474	3,695,280	43,889,297
LABADIE 3													
I:LAB COAL	0	759	759	3,492	455	1,974	2,733	1,215	911	2,429	1,215	759	16,699
I:OIL MO	0	759	759	3,492	455	1,974	2,733	1,215	911	2,429	1,215	759	16,699
P:LAB COAL	4,059,759	3,449,775	3,952,968	3,808,317	4,112,753	3,600,883	3,388,668	3,982,592	3,749,203	3,719,352	3,722,731	4,078,056	45,625,055
LABADIE 4													
I:LAB COAL	2,277	607	759	0	1,366	1,063	911	2,125	455	2,277	1,063	2,884	15,789
I:OIL MO	2,277	607	759	0	1,366	1,063	911	2,125	455	2,277	1,063	2,884	15,789
P:LAB COAL	3,914,903	3,759,013	4,251,698	4,154,210	3,961,118	3,826,856	3,881,156	3,562,947	3,768,452	3,791,348	3,987,008	3,912,997	46,771,704
MERAMEC 1													
I:GAS MRT	389	164	225	0	328	61	266	328	164	369	184	123	2,601
I:MER COAL	400	169	232	0	337	63	274	337	169	379	190	126	2,675
P:MER COAL	810,103	740,805	264,616	0	311,490	792,820	806,043	681,286	689,930	757,987	767,397	848,502	7,470,978
C:GAS MRT	5,223	4,774	1,707	0	2,011	5,108	5,195	4,393	4,446	4,887	4,945	5,467	48,156
MERAMEC 2													
I:GAS MRT	82	143	307	328	184	143	61	82	123	287	430	0	2,171
I:MER COAL	84	147	316	337	190	147	63	84	126	295	442	0	2,233
P:MER COAL	835,168	785,307	869,275	780,091	862,403	786,545	845,713	822,027	779,289	799,744	762,831	869,726	9,798,119
C:GAS MRT	5,381	5,060	5,603	5,029	5,557	5,068	5,448	5,296	5,021	5,155	4,919	5,602	63,140
MERAMEC 3													
I:GAS MRT	596	1,787	655	1,370	1,310	1,965	1,013	1,013	298	1,429	1,310	1,072	13,818
I:MER COAL	674	2,023	742	1,551	1,484	2,225	1,146	1,146	337	1,618	1,484	1,214	15,645
P:MER COAL	1,990,372	1,490,531	2,055,537	1,764,183	1,571,365	1,657,319	1,746,555	1,761,209	908,642	546,035	1,658,309	1,840,255	18,990,313
C:GAS MRT	12,829	9,625	13,249	11,382	10,140	10,702	11,264	11,358	5,857	3,537	10,700	11,868	122,511
MERAMEC 4													

I:GAS MRT	1,454	469	610	281	1,689	938	1,173	610	235	0	1,407	1,032	9,897
I:MER COAL	1,742	562	730	337	2,023	1,124	1,405	730	281	0	1,685	1,236	11,854
P:MER COAL	2,251,502	2,186,429	2,593,637	2,379,853	2,012,062	2,207,178	2,343,621	2,367,957	2,234,601	1,049,542	1,589,583	2,150,926	25,366,890
C:GAS MRT	14,523	14,090	16,715	15,333	12,984	14,230	15,112	15,261	14,397	6,760	10,259	13,869	163,534
MERAMEC CT1													
P:OIL MO	0	0	0	0	0	0	0	351	0	0	0	0	351
MERAMEC CT2													
I:OIL MO	0	30	0	0	0	0	0	18	0	0	0	24	73
P:GAS MRT	0	154	0	0	0	0	0	924	0	0	0	1,162	2,240
MEXICO CT													
P:OIL MO	0	0	0	0	0	0	0	233	0	0	0	0	233
MOBERLY CT													
P:OIL MO	0	0	0	0	0	0	0	122	0	0	0	0	122
MOREAU CT													
P:OIL MO	0	0	0	0	0	0	0	120	0	0	0	0	120
PENO CREEK CT1													
P:GAS PEPL	24,244	14,458	4,530	0	5,053	15,693	32,436	24,777	5,979	2,254	2,204	16,832	148,460
PENO CREEK CT2													
P:GAS PEPL	23,487	14,460	4,530	0	4,395	15,646	32,248	23,511	5,496	2,207	2,204	16,676	144,859
PENO CREEK CT3													
P:GAS PEPL	23,066	14,447	4,530	0	3,761	15,606	31,987	22,702	5,234	2,076	2,204	16,592	142,204
PENO CREEK CT4													
P:GAS PEPL	21,972	14,418	4,508	0	3,214	15,580	31,632	21,931	5,109	2,073	2,204	16,203	138,843
PINCKNEY CT1													
P:GAS NGP	31,533	17,462	6,144	1,181	6,367	31,247	44,278	34,319	9,522	2,966	3,965	28,172	217,155
PINCKNEY CT2													
P:GAS NGP	31,259	17,458	5,926	1,181	5,940	31,118	43,852	33,672	9,253	2,967	3,965	28,079	214,669
PINCKNEY CT3													
P:GAS NGP	31,016	17,458	5,885	1,181	5,619	30,934	43,553	33,117	9,070	2,947	3,965	28,043	212,789
PINCKNEY CT4													
P:GAS NGP	30,812	17,458	5,815	1,181	5,257	30,799	43,277	32,447	8,899	2,947	3,965	27,860	210,716
PINCKNEY CT5													
P:GAS NGP	2,502	2,756	379	0	62	0	2,693	1,480	0	0	411	4,684	14,967
PINCKNEY CT6													
P:GAS NGP	2,073	2,627	379	0	62	0	2,627	1,245	0	0	411	4,507	13,930
PINCKNEY CT7													
P:GAS NGP	1,672	2,526	335	0	54	0	2,627	1,147	0	0	411	4,213	12,985

PINCKNEY CT8													
P:GAS NGP	1,488	2,480	316	0	32	0	2,610	1,067	0	0	411	4,020	12,423
RACCOON CRK CT1													
P:GAS PEPL	21,866	13,891	6,840	0	6,779	21,110	45,214	31,417	6,908	0	1,769	16,607	172,401
RACCOON CRK CT2													
P:GAS PEPL	16,420	11,946	6,814	0	4,999	19,608	44,869	25,547	6,002	0	1,603	16,763	154,570
RACCOON CRK CT4													
P:GAS PEPL	18,463	12,163	5,289	0	3,155	18,845	42,928	24,973	5,846	0	1,769	14,710	148,142
RUSH ISLAND 1													
I:OIL MO	397	1,190	0	4,760	1,983	3,173	4,363	2,181	3,173	992	6,346	2,181	30,738
I:RUS COAL	397	1,190	0	4,760	1,983	3,173	4,363	2,181	3,173	992	6,346	2,181	30,738
P:RUS COAL	3,845,609	1,946,954	0	3,757,817	3,127,157	3,501,030	3,529,007	3,539,884	3,352,324	3,835,596	2,617,268	3,818,639	36,871,283
RUSH ISLAND 2													
I:OIL MO	3,371	3,173	1,983	595	3,966	6,544	3,570	2,181	1,190	3,371	2,776	3,966	36,688
I:RUS COAL	3,371	3,173	1,983	595	3,966	6,544	3,570	2,181	1,190	3,371	2,776	3,966	36,688
P:RUS COAL	3,890,091	3,534,611	3,740,464	3,758,943	3,619,985	3,560,644	3,349,325	3,924,709	3,593,135	3,840,126	3,610,664	3,562,573	43,985,267
SIOUX 1													
I:OIL MO	513	366	660	330	1,283	953	1,612	440	733	0	0	1,026	7,915
I:SIO COAL	3,433	2,452	4,414	2,207	8,583	6,376	10,790	2,943	4,905	0	0	6,866	52,970
P:SIO COAL	3,153,518	2,991,406	2,987,578	2,973,335	2,856,354	2,456,306	2,408,914	3,156,736	2,728,342	0	0	1,888,106	27,600,593
SIOUX 2													
P:SIO COAL	3,368,492	3,045,858	3,365,502	3,141,148	2,794,658	3,083,367	3,162,165	3,026,982	2,886,146	2,976,412	3,149,192	3,295,486	37,295,406
VENICE CT1													
P:OIL MO	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2													
I:OIL MO	152	42	61	0	6	0	97	18	0	0	0	109	485
P:GAS MRT	3,066	191	1,243	0	759	0	6,532	2,041	0	0	0	17,988	31,820
VENICE CT3													
P:GAS MRT	51,862	19,323	3,205	0	10,567	22,897	55,194	37,889	5,763	0	1,674	57,757	266,131
VENICE CT4													
P:GAS MRT	42,754	15,652	2,894	0	7,364	22,662	52,002	31,614	5,182	0	1,561	55,038	236,723
VENICE CT5													
P:GAS MRT	79	473	0	0	0	0	5,446	1,618	0	0	0	6,079	13,695
VIADUCT CT1													
P:GAS MRT	0	0	0	0	0	0	0	0	0	0	0	0	0

Ameren MPSC 0140
Ameren Benchmark Run
Original
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RealTime

Fuel Consumed Cost ($1000s)
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rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AUDRAIN CT1 P:GAS TRKL	0	0	0	0	0	0	0	4	0	0	0	0	4
AUDRAIN CT2 P:GAS TRKL	0	0	0	0	0	0	0	4	0	0	0	0	4
AUDRAIN CT3 P:GAS TRKL	0	0	0	0	0	0	0	4	0	0	0	0	4
AUDRAIN CT4 P:GAS TRKL	0	0	0	0	0	0	0	4	0	0	0	0	4
AUDRAIN CT5 P:GAS TRKL	0	0	0	0	0	0	0	3	0	0	0	0	3
AUDRAIN CT6 P:GAS TRKL	0	0	0	0	0	0	0	3	0	0	0	1	4
AUDRAIN CT7 P:GAS TRKL	0	0	0	0	0	0	0	2	0	0	0	0	2
AUDRAIN CT8 P:GAS TRKL	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1 P:NUCLEAR	3,932	3,540	3,918	126	2,005	3,736	3,867	3,869	3,751	3,933	3,801	3,929	40,406
FAIRGROUNDS GT P:OIL MO	0	0	0	0	0	0	0	1	0	0	0	0	1
GOOSE CREEK CT1 P:GAS PEPL	9	3	0	0	2	0	44	32	0	0	0	51	141
GOOSE CREEK CT2 P:GAS PEPL	7	3	0	0	2	0	44	33	3	0	0	41	133
GOOSE CREEK CT3 P:GAS PEPL	4	3	0	0	0	0	41	21	0	0	0	45	113
GOOSE CREEK CT4 P:GAS PEPL	4	3	0	0	3	0	36	18	0	0	0	26	89
GOOSE CREEK CT5 P:GAS PEPL	4	3	0	0	0	0	38	5	0	0	0	18	68

GOOSE CREEK CT6													
P:GAS PEPL	3	2	0	0	0	0	26	14	0	0	0	19	64
HOWARD BEND CT													
P:OIL MO	0	0	0	0	0	0	0	1	0	0	0	0	1
KINMUNDY CT 1													
P:GAS NGP	175	104	12	0	8	75	181	115	31	0	8	144	853
KINMUNDY CT 2													
P:GAS NGP	142	100	11	0	4	74	175	92	29	0	8	139	775
KIRKSVILLE CT													
P:GAS MRT	0	0	0	0	0	0	0	1	0	0	0	0	1
LABADIE 1													
I:LAB COAL	0	1	0	0	1	1	0	2	1	0	0	3	10
I:OIL MO	1	8	0	1	7	8	0	14	8	0	0	26	73
P:LAB COAL	4,869	4,341	4,997	4,805	4,486	4,399	4,762	4,697	2,391	0	0	4,109	43,855
LABADIE 2													
I:LAB COAL	2	0	3	0	0	1	3	4	2	2	0	1	18
I:OIL MO	12	0	21	0	0	7	21	29	12	18	3	9	131
P:LAB COAL	4,832	4,442	4,744	4,568	4,771	4,196	4,132	4,400	4,365	4,699	4,693	4,582	54,423
LABADIE 3													
I:LAB COAL	0	1	1	4	1	2	3	2	1	3	2	1	21
I:OIL MO	0	6	7	32	4	17	25	11	9	26	14	8	158
P:LAB COAL	5,034	4,278	4,902	4,722	5,100	4,465	4,202	4,938	4,649	4,612	4,616	5,057	56,575
LABADIE 4													
I:LAB COAL	3	1	1	0	2	1	1	3	1	3	1	4	20
I:OIL MO	17	5	7	0	12	9	8	19	4	25	12	29	148
P:LAB COAL	4,854	4,661	5,272	5,151	4,912	4,745	4,813	4,418	4,673	4,701	4,944	4,852	57,997
MERAMEC 1													
I:GAS MRT	2	1	2	0	2	0	2	2	1	3	1	1	17
I:MER COAL	1	0	0	0	0	0	0	0	0	1	0	0	4
P:MER COAL	1,088	995	355	0	418	1,065	1,083	915	927	1,018	1,031	1,140	10,034
C:GAS MRT	29	29	12	0	13	33	33	29	31	39	33	40	320
MERAMEC 2													
I:GAS MRT	0	1	2	2	1	1	0	1	1	2	3	0	15
I:MER COAL	0	0	0	0	0	0	0	0	0	0	1	0	3
P:MER COAL	1,122	1,055	1,167	1,048	1,158	1,056	1,136	1,104	1,047	1,074	1,024	1,168	13,159
C:GAS MRT	30	31	38	31	35	32	34	35	35	41	33	41	417
MERAMEC 3													
I:GAS MRT	3	11	4	9	8	13	6	7	2	11	9	8	91
I:MER COAL	1	3	1	2	2	3	2	2	0	2	2	2	21
P:MER COAL	2,673	2,002	2,761	2,369	2,110	2,226	2,346	2,365	1,220	733	2,227	2,471	25,504
C:GAS MRT	71	59	91	71	64	68	71	76	40	28	72	86	797
MERAMEC 4													

I:GAS MRT	8	3	4	2	11	6	7	4	2	0	9	7	63
I:MER COAL	2	1	1	0	3	2	2	1	0	0	2	2	16
P:MER COAL	3,024	2,936	3,483	3,196	2,702	2,964	3,147	3,180	3,001	1,410	2,135	2,889	34,068
C:GAS MRT	80	86	115	95	82	91	95	102	99	54	69	100	1,069
MERAMEC CT1													
P:OIL MO	0	0	0	0	0	0	0	3	0	0	0	0	3
MERAMEC CT2													
I:OIL MO	0	0	0	0	0	0	0	0	0	0	0	0	1
P:GAS MRT	0	1	0	0	0	0	0	6	0	0	0	8	16
MEXICO CT													
P:OIL MO	0	0	0	0	0	0	0	2	0	0	0	0	2
MOBERLY CT													
P:OIL MO	0	0	0	0	0	0	0	1	0	0	0	0	1
MOREAU CT													
P:OIL MO	0	0	0	0	0	0	0	1	0	0	0	0	1
PENO CREEK CT1													
P:GAS PEPL	131	84	31	0	31	97	198	159	38	17	15	123	922
PENO CREEK CT2													
P:GAS PEPL	127	84	31	0	27	96	196	151	35	17	15	122	900
PENO CREEK CT3													
P:GAS PEPL	124	84	31	0	23	96	195	146	33	16	15	121	883
PENO CREEK CT4													
P:GAS PEPL	118	83	30	0	20	96	193	141	33	16	15	119	863
PINCKNEY CT1													
P:GAS NGP	164	99	41	7	39	193	274	223	63	22	25	200	1,350
PINCKNEY CT2													
P:GAS NGP	163	99	40	7	37	192	271	219	61	22	25	199	1,334
PINCKNEY CT3													
P:GAS NGP	162	99	39	7	35	191	269	215	60	22	25	199	1,322
PINCKNEY CT4													
P:GAS NGP	161	99	39	7	32	190	267	211	58	22	25	198	1,309
PINCKNEY CT5													
P:GAS NGP	13	16	3	0	0	0	17	10	0	0	3	33	94
PINCKNEY CT6													
P:GAS NGP	11	15	3	0	0	0	16	8	0	0	3	32	87
PINCKNEY CT7													
P:GAS NGP	9	14	2	0	0	0	16	7	0	0	3	30	82

PINCKNEY CT8													
P:GAS NGP	8	14	2	0	0	0	16	7	0	0	3	29	78
RACCOON CRK CT1													
P:GAS PEPL	118	80	46	0	42	130	275	201	44	0	12	122	1,070
RACCOON CRK CT2													
P:GAS PEPL	89	69	46	0	31	121	273	164	38	0	11	123	964
RACCOON CRK CT4													
P:GAS PEPL	100	70	36	0	19	116	261	160	37	0	12	108	919
RUSH ISLAND 1													
I:OIL MO	3	9	0	43	18	27	39	20	31	11	72	22	296
I:RUS COAL	1	2	0	8	3	5	7	3	5	2	10	3	49
P:RUS COAL	6,168	3,123	0	6,028	5,016	5,616	5,661	5,678	5,377	6,152	4,198	6,125	59,142
RUSH ISLAND 2													
I:OIL MO	26	25	18	5	35	57	32	20	12	36	32	40	338
I:RUS COAL	5	5	3	1	6	10	6	3	2	5	4	6	59
P:RUS COAL	6,240	5,670	6,000	6,029	5,806	5,711	5,372	6,295	5,763	6,160	5,792	5,714	70,552
SIOUX 1													
I:OIL MO	4	3	6	3	11	8	15	4	7	0	0	10	72
I:SIO COAL	6	4	7	4	14	11	18	5	8	0	0	12	89
P:SIO COAL	5,288	5,017	5,010	4,986	4,790	4,119	4,040	5,294	4,575	0	0	3,166	46,286
SIOUX 2													
P:SIO COAL	5,649	5,108	5,644	5,268	4,687	5,171	5,303	5,076	4,840	4,991	5,281	5,527	62,544
VENICE CT1													
P:OIL MO	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2													
I:OIL MO	1	0	1	0	0	0	1	0	0	0	0	1	4
P:GAS MRT	17	1	9	0	5	0	41	14	0	0	0	130	216
VENICE CT3													
P:GAS MRT	285	118	22	0	67	146	348	253	40	0	11	418	1,707
VENICE CT4													
P:GAS MRT	235	95	20	0	47	145	328	211	36	0	11	398	1,525
VENICE CT5													
P:GAS MRT	0	3	0	0	0	0	34	11	0	0	0	44	92
VIADUCT CT1													
P:GAS MRT	0	0	0	0	0	0	0	0	0	0	0	0	0

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Fuel Consumed Quantity

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
GAS MRT	138,237	71,904	46,414	33,724	52,893	83,776	158,706	112,544	41,485	22,424	37,390	177,058	976,554
GAS NGP	193,305	116,401	28,612	4,726	25,266	148,201	243,138	170,467	45,834	11,826	19,987	169,517	1,177,279
GAS PEPL	155,151	98,596	37,040	0	32,483	122,088	298,941	194,190	41,058	8,609	13,959	141,541	1,143,656
GAS TRKL	0	0	0	0	0	0	0	3,677	0	0	0	150	3,827
LAB COAL	15,801,602	14,294,158	16,063,969	15,524,625	15,541,825	14,363,694	14,447,886	14,890,164	12,968,910	11,306,464	11,496,794	15,007,315	171,707,406
LAB START	0	0	0	0	0	0	0	0	0	0	0	0	0
MER 12 STA	0	0	0	0	0	0	0	0	0	0	0	0	0
MER 3 ST	0	0	0	0	0	0	0	0	0	0	0	0	0
MER 4 STAR	0	0	0	0	0	0	0	0	0	0	0	0	0
MER COAL	5,890,046	5,205,973	5,785,085	4,926,352	4,761,354	5,447,422	5,744,819	5,634,777	4,613,375	3,155,601	4,781,921	5,711,985	61,658,708
NUCLEAR	8,704,582	7,836,446	8,653,758	278,434	4,381,308	8,127,754	8,356,608	8,378,921	8,194,790	8,631,430	8,396,193	8,698,374	88,638,596
OIL MO	8,386	7,120	6,499	9,335	9,853	15,417	15,563	13,980	8,470	10,739	11,703	14,399	131,464
RUS COAL	7,739,468	5,485,927	3,742,447	7,522,114	6,753,092	7,071,391	6,886,264	7,468,956	6,949,821	7,680,084	6,237,054	7,387,359	80,923,977
RUS START	0	0	0	0	0	0	0	0	0	0	0	0	0
SIO COAL	6,525,443	6,039,716	6,357,494	6,116,689	5,659,596	5,546,049	5,581,869	6,186,660	5,619,392	2,976,412	3,149,192	5,190,458	64,948,968
SIO START	0	0	0	0	0	0	0	0	0	0	0	0	0

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Fuel Consumed Cost (1000s)

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
GAS MRT	760	439	318	209	335	535	1,000	751	286	180	252	1,280	6,346
GAS NGP	1,007	658	192	28	155	914	1,503	1,106	301	90	128	1,202	7,284
GAS PEPL	836	570	250	0	200	752	1,821	1,245	262	66	92	1,036	7,129
GAS TRKL	0	0	0	0	0	0	0	25	0	0	0	1	26
LAB COAL	19,594	17,725	19,919	19,251	19,272	17,811	17,915	18,464	16,081	14,020	14,256	18,609	212,917
LAB START	0	0	0	0	0	0	0	0	0	0	0	0	0
MER 12 STA	0	0	0	0	0	0	0	0	0	0	0	0	0
MER 3 ST	0	0	0	0	0	0	0	0	0	0	0	0	0
MER 4 STAR	0	0	0	0	0	0	0	0	0	0	0	0	0
MER COAL	7,910	6,992	7,769	6,616	6,394	7,316	7,715	7,568	6,196	4,238	6,422	7,671	82,808
NUCLEAR	3,932	3,540	3,918	126	2,005	3,736	3,867	3,869	3,751	3,933	3,801	3,929	40,406
OIL MO	64	56	59	85	88	134	141	126	83	116	133	146	1,230
RUS COAL	12,414	8,799	6,003	12,065	10,832	11,343	11,046	11,980	11,148	12,319	10,004	11,849	129,802
RUS START	0	0	0	0	0	0	0	0	0	0	0	0	0
SIO COAL	10,943	10,129	10,662	10,258	9,491	9,301	9,361	10,375	9,424	4,991	5,281	8,704	108,919
SIO START	0	0	0	0	0	0	0	0	0	0	0	0	0

Units

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Unit Starts (Cold)
Page: 1

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT6	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT7	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1	0	0	0	0	1	0	0	0	0	0	0	0	1
FAIRGROUNDS GT	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT1	1	1	0	0	0	0	1	1	0	0	0	2	5
GOOSE CREEK CT2	1	1	0	0	0	0	1	1	0	0	0	2	4
GOOSE CREEK CT3	0	1	0	0	0	0	1	0	0	0	0	2	4
GOOSE CREEK CT4	0	1	0	0	0	0	1	0	0	0	0	1	3
GOOSE CREEK CT5	0	1	0	0	0	0	1	0	0	0	0	1	3
GOOSE CREEK CT6	0	1	0	0	0	0	1	0	0	0	0	1	3
HOWARD BEND CT	0	0	0	0	0	0	0	0	0	0	0	0	0
KINMUNDY CT 1	5	4	2	0	0	1	3	3	1	0	1	2	22
KINMUNDY CT 2	5	4	1	0	0	1	3	2	1	0	1	2	21
KIRKSVILLE CT	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 1	0	0	0	0	0	0	0	1	0	0	0	1	3
LABADIE 2	1	0	1	0	0	0	1	1	1	1	0	0	6
LABADIE 3	0	0	0	1	0	1	1	1	0	1	1	0	7
LABADIE 4	1	0	0	0	1	0	0	1	0	1	0	1	7
MERAMEC 1	1	1	1	0	1	0	1	1	1	1	1	0	8
MERAMEC 2	0	0	1	1	1	0	0	0	0	1	1	0	7
MERAMEC 3	1	2	1	1	1	2	1	1	0	2	1	1	15
MERAMEC 4	2	1	1	0	2	1	2	1	0	0	2	1	13
MERAMEC CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC CT2	0	0	0	0	0	0	0	0	0	0	0	0	1
MEXICO CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MOBERLY CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MOREAU CT	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT1	7	5	1	0	1	3	1	3	3	1	3	2	29
PENO CREEK CT2	7	5	1	0	1	3	1	3	3	1	3	2	29
PENO CREEK CT3	7	5	1	0	1	3	1	3	2	1	3	2	29
PENO CREEK CT4	7	5	1	0	1	3	1	3	2	1	3	2	29
PINCKNEY CT1	7	5	2	1	1	5	2	5	3	1	5	0	37
PINCKNEY CT2	7	5	2	1	1	5	2	5	3	1	5	0	37
PINCKNEY CT3	7	5	2	1	1	5	2	5	3	1	5	0	37
PINCKNEY CT4	7	5	2	1	1	5	2	5	3	1	5	0	37
PINCKNEY CT5	3	4	1	0	0	0	1	1	0	0	1	2	12
PINCKNEY CT6	3	3	1	0	0	0	1	1	0	0	1	2	12
PINCKNEY CT7	3	3	1	0	0	0	1	1	0	0	1	2	11

PINCKNEY CT8	2	3	1	0	0	0	1	1	0	0	1	2	11
RACCOON CRK CT1	5	4	2	0	1	2	1	3	1	0	2	1	23
RACCOON CRK CT2	5	4	2	0	1	2	1	3	1	0	2	1	22
RACCOON CRK CT4	5	4	2	0	1	2	1	3	1	0	2	2	22
RUSH ISLAND 1	0	0	0	2	1	1	1	1	1	0	2	1	10
RUSH ISLAND 2	1	1	1	0	1	2	1	1	0	1	1	1	12
SIOUX 1	1	1	1	1	2	2	3	1	1	0	0	2	14
SIOUX 2	0	1	1	1	1	1	1	2	2	1	1	1	11
VENICE CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2	2	0	1	0	0	0	1	0	0	0	0	1	5
VENICE CT3	5	3	2	0	1	1	3	2	1	0	1	3	21
VENICE CT4	4	3	2	0	0	1	3	2	1	0	1	3	20
VENICE CT5	0	0	0	0	0	0	1	0	0	0	0	3	4
VIADUCT CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	113	91	34	11	23	54	53	66	36	26	55	52	605
Units													
Coal	8	7	7	7	12	11	13	10	7	8	10	10	111
Nuclear	0	0	0	0	1	0	0	0	0	0	0	0	1
CT	105	85	27	4	10	42	40	56	29	8	45	42	493

Ameren MPSC 0140
Ameren Benchmark Run
Original
2005

RealTime

Unit Starts (Hot)
Page: 1

rDate: 12-12-2006
rTime: 00:08:55

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Generating Units													
AUDRAIN CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT2	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT3	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT4	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT5	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT6	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT7	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDRAIN CT8	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY 1	0	0	0	0	0	0	0	0	0	0	0	0	0
FAIRGROUNDS GT	0	0	0	0	0	0	0	0	0	0	0	0	0
GOOSE CREEK CT1	0	0	0	0	0	0	0	1	0	0	0	4	5
GOOSE CREEK CT2	0	0	0	0	0	0	0	1	0	0	0	3	4
GOOSE CREEK CT3	0	0	0	0	0	0	0	0	0	0	0	4	4
GOOSE CREEK CT4	0	0	0	0	0	0	0	0	0	0	0	2	3
GOOSE CREEK CT5	0	0	0	0	0	0	0	0	0	0	0	1	1
GOOSE CREEK CT6	0	0	0	0	0	0	0	0	0	0	0	1	2
HOWARD BEND CT	0	0	0	0	0	0	0	0	0	0	0	0	0
KINMUNDY CT 1	4	3	0	0	0	2	2	1	0	0	0	8	20
KINMUNDY CT 2	3	3	0	0	0	2	2	1	0	0	0	8	19
KIRKSVILLE CT	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 1	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 2	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 3	0	0	0	0	0	0	0	0	0	0	0	0	0
LABADIE 4	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC 1	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC 2	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC 3	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC 4	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
MERAMEC CT2	0	0	0	0	0	0	0	0	0	0	0	2	2
MEXICO CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MOBERLY CT	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRAU CT	0	0	0	0	0	0	0	0	0	0	0	0	0
PENO CREEK CT1	7	5	4	0	1	3	9	7	1	1	1	15	54
PENO CREEK CT2	7	5	4	0	1	3	9	6	1	1	1	14	53
PENO CREEK CT3	7	5	4	0	1	3	9	6	1	1	1	14	52
PENO CREEK CT4	6	5	4	0	1	3	9	6	1	1	1	14	51
PINCKNEY CT1	18	9	6	2	1	6	14	8	5	1	5	27	102
PINCKNEY CT2	17	9	6	2	1	6	14	8	5	1	5	27	101
PINCKNEY CT3	17	9	6	2	1	6	14	8	5	1	5	27	101
PINCKNEY CT4	17	9	6	2	1	6	14	7	5	1	5	27	100
PINCKNEY CT5	1	1	0	0	0	0	0	0	0	0	0	7	8
PINCKNEY CT6	0	1	0	0	0	0	0	0	0	0	0	7	8
PINCKNEY CT7	0	1	0	0	0	0	0	0	0	0	0	6	8

PINCKNEY CT8	0	1	0	0	0	0	0	0	0	0	0	6	7
RACCOON CRK CT1	8	6	3	0	1	4	8	6	1	0	0	14	51
RACCOON CRK CT2	6	5	3	0	1	4	9	4	1	0	0	15	48
RACCOON CRK CT4	7	5	2	0	0	4	8	5	1	0	0	13	45
RUSH ISLAND 1	0	0	0	0	0	0	0	0	0	0	0	0	0
RUSH ISLAND 2	0	0	0	0	0	0	0	0	0	0	0	0	0
SIOUX 1	0	0	0	0	0	0	0	0	0	0	0	0	0
SIOUX 2	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
VENICE CT2	1	0	1	0	0	0	1	0	0	0	0	13	16
VENICE CT3	3	1	0	0	0	2	2	1	0	0	0	9	19
VENICE CT4	2	1	0	0	0	2	2	1	0	0	0	9	17
VENICE CT5	0	0	0	0	0	0	0	0	0	0	0	2	2
VIADUCT CT1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	130	83	48	8	12	57	127	81	29	8	24	296	903
Units													
CT	130	83	48	8	12	57	127	81	29	8	24	296	903

Jim Lowery

From: Jim Lowery
Sent: Tuesday, December 19, 2006 2:09 PM
To: Timothy D Finnell; Sam.Newell@brattle.com; Adam Schumacher
Subject: FW: ER-2007-0002 Staff witness Rahrer workpapers--more to follow.
Attachments: Bullet7.rtf; Bullet2.rtf; Bullet3.rtf; Bullet4.rtf; Bullet5.rtf; Bullet6.rtf; Bullet1.rtf

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From: Williams, Nathan [mailto:nathan.williams@psc.mo.gov]
Sent: Tue 12/19/2006 2:03 PM
To: TBYRNE@AMEREN.COM; Jim Lowery
Cc: Dottheim, Steve; Charlton, Toni
Subject: ER-2007-0002 Staff witness Rahrer workpapers--more to follow.

<<Bullet7.rtf>> <<Bullet2.rtf>> <<Bullet3.rtf>> <<Bullet4.rtf>> <<Bullet5.rtf>> <<Bullet6.rtf>> <<Bullet1.rtf>>

EXHIBIT
PENGAD 800-631-6989
S Rahrer
1-16-07 sf

Workpapers with inputs and results of the Benchmarking Model, which should include hourly AmerenUE load, hourly generation output (MWh) and costs ($ or $/MWh) for each generating unit, he hourly volume and price of all contract purchases and, separately, all economy purchases (MWh and $/MWh), he hourly volume and price of all contract sales and, separately, all economy sales (MWh and $/MWh); and any other hourly data that is available from the RealTime model.

The following files are provided:

Purch.CSV: contains hourly purchase maximum capacity and dispatch price

Sale1A.CSV: contains hourly sale maximum capacity and dispatch price for the sales contract that is available 100% of the time.

Sale2A.CSV: contains hourly sale maximum capacity and dispatch price for the sales contract that is available 50% of the time.

Load.CSV: contains hourly load (demand)

APL1.Txt: contains hourly fixed purchases and dispatch prices for the APL contract.

APL2.Txt: contains hourly economic purchase max capacities and dispatch prices for the APL contract.

The APL purchase contract is generally a fixed purchase contract (where a fixed amount is purchased every hour) except if purchasing the power interferes with unit must run capacities. Because of that exception, I broke the contract into two pieces, one a fixed purchase and one an economic purchase. The fixed purchase contract accounts for 1,311,200 MWHs and the economic contract accounts for 90,400 MWHs of the 1,401,600 MWHS (160MW * 8760 Hours) APL contract. The hourly decision whether to make the contract fixed or economic is based on the hourly load, maximum pumping amount and unit planned outages. If the hourly sum of the unit must run capacities (taking into account the units in planned outages) is less than the current hour's demand, then the APL contract is not Fixed for that hour. In this case, the model can make the decision whether to purchase any APL power.

Following files contain output from the RealTime external module that processes actual unit outage information, provided by AmerenUE. This information was imported into RealTime. P values are Time-To-Fail information (hours to failure,probability,probability outage is a partial outage, partial outage capacity). Q values are full outage Time-To-Repair values (hours to repair, probability). R values are partial outage Time-To-Report values.

Labadie_1.imp
Labadie_2imp
Labadie_3.imp
Labadie_4.imp
Meramec_1.imp
Meramec_2.imp
Meramec_3.imp
Meramec_4.imp
Rush_Island_1.imp
Rush_Island_2.imp
Sioux_1.imp
Sioux_2.imp

The following file contains the actual unit forced outage information used by both the RealTime Benchmarking Model and the Staff Model. After an initial run of the model, an attempt was made to adjust the RealTime unit outages to more closely match the unit outages reported in the AmerenUE Benchmarking model. Schedule 3 of my testimony shows the final comparison of the AmerenUE outages versus RealTime outages.

UnitFOT.exp

Results from the RealTime Benchmarking Model have already been provided in both a summary and a monthly output form.

Workpapers with results and analyses performed to develop the inputs for the Benchmarking Model referenced in his testimony.

All inputs were gathered from information submitted by AmerenUE. With the exception of the unit forced outage information, Osage hourly generation, APL purchase contract and nuclear fuel accounting cost, all data were extracted exactly as is and transcribed exactly as is to RealTime. All data includes:

- fuel costs
- hourly load
- unit generating parameters
- Keokuk hourly hydro generation
- Taum Sauk pumped storage parameters
- APL purchase power contract
- Economic puchase power contract
- Sales power contracts

To compute nuclear fuel accounting cost, I multiplied the RealTime Callaway generation times the $0.936/mwh spent fuel cost and then added $1,590,000 (enrichment facilities). I then divided that number by the number of RealTime mmBTUs consumed by Callaway to get a $/mmBTU value that I then added to the monthly nuclear fuel cost provided by AmerenUE. The value added to AmerenUE provided dispatch cost to get accounting cost was $0.1117/mmBTU.

To determine Osage hourly generation, I took the maximum Osage capacity and the monthly Osage output (both provided by AmerenUE) and had RealTime build hourly generation based on the hourly demand (provided by AmerenUE). This is a built in function of RealTime.

To compute unit availability information (i.e., forced outage schedules), I used an auxiliary RealTime module to process the outage information that was provided by AmerenUE. This module looks at outages over a period of time and develops three outage tables based on that information. The tables contain time-to-fail information and time-to-repair information.Schedule 3 of my testimony displayed a comparison of AmerenUE unit availability versus RealTime unit availability.

The APL purchase contract is generally a fixed purchase contract (where a fixed amount is purchased every hour) except if purchasing the power interferes with unit must run capacities. Because of that exception, I broke the contract into two pieces, one a fixed purchase and one an economic purchase. The fixed purchase contract accounts for 1,311,200 MWHs and the economic contract accounts for 90,400 MWHs of the 1,401,600 MWHS (160MW * 8760 Hours) APL contract. The hourly decision whether to make the contract fixed or economic is based on the hourly load, maximum pumping amount and unit planned outages. If the hourly sum of the unit must run capacities (taking into account the units in planned outages) is less than the current hour's demand, then the APL contract is not Fixed for that hour. In this case, the model can make the decision whether to purchase any APL power.

Workpapers for all of the figures reported on page 7 of his testimony regardng aggregate and unit- or plant-level comparisons between RealTime and AmerenUE's model

The items mentioned on Page 7 of my testimony relate to RealTime unit outages. The *.IMP and the UnitFOT.EXP files that I submitted as workpapers for Bullet #2 contain all of my work papers related to creation of and input of unit outages. An auxiliary RealTime external module is available to process detailed unit outages and convert the information into tables suitable for RealTime to model unit outages. AmerenUE provided the detailed unit outage file.