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Minneapolis, MN 55401

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August 26, 2013

—Via Electronic Filing—

Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: REPLY COMMENTS
2011-2012 ANNUAL AUTOMATIC ADJUSTMENT OF CHARGES REPORT
DOCKET NO. E999/AA-12-757

Dear Dr. Haar:

Northern States Power Company, doing business as Xcel Energy, submits these Reply Comments to the Review of our Annual Automatic Adjustment of Charges (AAA) Report for 2011-2012 (FYE12) filed by the Minnesota Department of Commerce - Division of Energy Resources on June 5, 2013.

Portions of this Reply contain information marked as trade secret pursuant to Minnesota Statute § 13.37, subd. 1(b). In particular, the information designated as Trade Secret derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.

We have electronically filed this document with the Minnesota Public Utilities Commission, and copies have been served on the parties on the attached service list. Please contact me at paul.lehman@xcelenergy.com or (612) 330-7529 if you have any questions regarding this filing.

Sincerely,

/s/

PAUL J LEHMAN
MANAGER, REGULATORY COMPLIANCE AND FILINGS

Enclosures
c: Service List

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STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
David C. Boyd	Commissioner
Nancy Lange	Commissioner
J. Dennis O'Brien	Commissioner
Betsy Wergin	Commissioner

IN THE MATTER OF NORTHERN STATES
POWER COMPANY, REVIEW OF 2011-2012
ANNUAL AUTOMATIC ADJUSTMENT
REPORT FOR ITS ELECTRIC OPERATION

DOCKET No. E999/AA-12-757

REPLY COMMENTS

OVERVIEW

Northern States Power Company, doing business as Xcel Energy, submits this Reply to the Minnesota Department of Commerce - Division of Energy Resources June 5, 2013 review of our Annual Automatic Adjustment of Charges (AAA) Report for 2011-2012 (FYE12).

We appreciate the Department's review of our AAA report and in this Reply we respond to the Department's request for additional information by providing:

- Additional information surrounding the wind curtailment payments made under the "Reason Code 4 – Other" category during FYE12;
- Updated information on generation operations and maintenance (O&M) costs being recovered in the most recent rate cases, and actual 2012 generation O&M costs;
- A discussion of how the identified forced outages could have been avoided or alleviated;
- An explanation of why our Day Ahead and Real Time Energy costs were higher in FYE12 compared to the 2010-2011 AAA Reporting period (FYE11);
- An explanation of why our Real Time Revenue Neutrality Uplift costs increased in FYE12 compared to FYE11;
- An explanation about whether any of the Company's allocation methods have changed during the 2011-2012 reporting period;

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- A narrative of the Ancillary Services Market (ASM) at the Midcontinent Independent Transmission System Operator, Inc. (MISO) level and at the Company level consistent with our FYE11 AAA report; and
- The reason we were being charged for Excessive/Deficient Energy Deployment and Contingency Reserve Development Failures for FYE12.

The Department also made several proposals in its review. We also respond to several proposals made by the Department:

- We respectfully request to wait until the next AAA proceeding (FYE13) to determine the cost recovery of replacement power costs related to the Sherco Unit 3 extended plant outage as all information relevant to the cause of the extended outage will be available.
- We do not oppose the Commission requiring utilities to provide in future electric AAA filings the Minnesota-jurisdictional Schedule 10 costs and provide information to support MISO Schedule 10 cost increases of five percent or higher over the prior year costs, including explanation of benefits received by customers for these added costs.
- While the Department is open to any reasonable proposal by other parties, the Department recommends that, rather than allowing utilities to recover all changes in energy costs on a month-to-month basis, recovery of energy costs should be fixed in a rate case, with no adjustment between rate cases, at the utility's average energy costs (\$/kWh) over the previous three years before a rate case is filed.

We also provide additional information about our updated methodology for calculating replacement power costs as previously described in our Sherco Unit 3 restoration update filed on November 7, 2012 in Docket No. E002/AA-11-1173.

We believe that this Reply is fully responsive to the Department's requests and respectfully request that the Commission accept our FYE12 AAA Report as supplemented by this Reply.

REPLY

A. Wind Curtailment

The Department requested we provide the following additional information regarding wind curtailments made under the "Reason Code 4 – Other" curtailment category:

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- A chronological description of all events that led to wind curtailments during FYE12;
- For each event, the curtailment payments made and a description of the steps we took before and after the event to alleviate the need for such curtailments; and
- For each event, a justification for why our ratepayers should bear the full cost of these curtailment payments.

We provide the requested information below as well as explain the discrepancy between the “Reason Code 4 – Other” curtailment payment values reported in our April 2013 Fuel Clause Adjustment filing and our FYE12 AAA report.

1. *Fuel Clause Accounting*

The Department noted that the wind curtailment payments made under the “Reason Code 4 – Other” category in FYE12 were reported as **[TRADE SECRET BEGINS TRADE SECRET ENDS]** in the Company’s April 30, 2013 monthly Fuel Clause Adjustment (FCA) filing¹ whereas when the AAA report was filed on August 31, 2012, wind curtailment payments made under the Other category for the same time period were reported to be **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

We clarify that there is frequently a lag of up to several months between a curtailment incident and when an invoice for that incident is received, reviewed, and if the claim is found eligible for payment, approved and paid. We then update our curtailment summary reports to record a payment in the month of the incident rather than the month in which the payment was made. We have found this recording method to be more helpful for tracking purposes, but to improve the clarity of our reporting in the future, we will make particular note of curtailment values that may be subject to change because they are under review.

At the time we made the FYE12 AAA filing we had information supporting curtailment payments through May 2012. The payments we made in FYE12 for “Reason Code 4 – Other” curtailments increased because we received invoices related to the FYE12 reporting period after we made our filing. After investigating these invoices, we paid them. This resulted in the approximately \$440,000 increase in the “Reason Code 4 – Other” curtailment payments.

¹ Docket No. E002/AA-13-331.

2. *Curtailment Events*

During FYE12, three wind generation projects (Lake Benton I, Lake Benton II, and Fenton) recorded “Reason Code 4 – Other” curtailment events. In summary, these curtailments were related to:

- A transmission conductor “galloping”² event at Fenton; and
- Low voltage conditions at Lake Benton I and Lake Benton II.

Given the circumstances surrounding these curtailments, we deemed these events unique enough to be separately identified as “Reason Code 4 – Other” rather than as being due to lack of available transfer capacity (ATC), which would also have been applicable. We recognize that we are required to provide an explanation of each instance of “Reason Code 4 – Other.” We apologize for not providing this required information with our initial filing and are revisiting our internal reporting procedures to ensure process improvements are made going forward.

Below we provide a chronological description of each curtailment event, the steps taken before and after each event to alleviate the need for such curtailment, and the reasons why ratepayers should bear the cost of the curtailment payments. To assist in review of this discussion, Table 1 lists each curtailment event, the date and payment by site.

² Conductor gallop is the high-amplitude, low-frequency oscillation of overhead power lines due to wind. The movement of the wires occurs most commonly in the vertical plane, although horizontal or rotational motion is also possible.

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Table 1: Wind Curtailment “Reason Code 4- Other” for FYE12

Production Month	Date Paid		Wind Production Delivered		Lost Production		Total Paid
	Delivered MWh	Lost MWh	MWh Delivered	Amount Xcel Energy Paid	Lost MWh	Amount Xcel Energy Paid	
[TRADE SECRET BEGINS							
LAKE BENTON I							
LAKE BENTON II							
FENTON							
TOTAL CURTAILMENT PAYMENTS							
TRADE SECRET ENDS]							

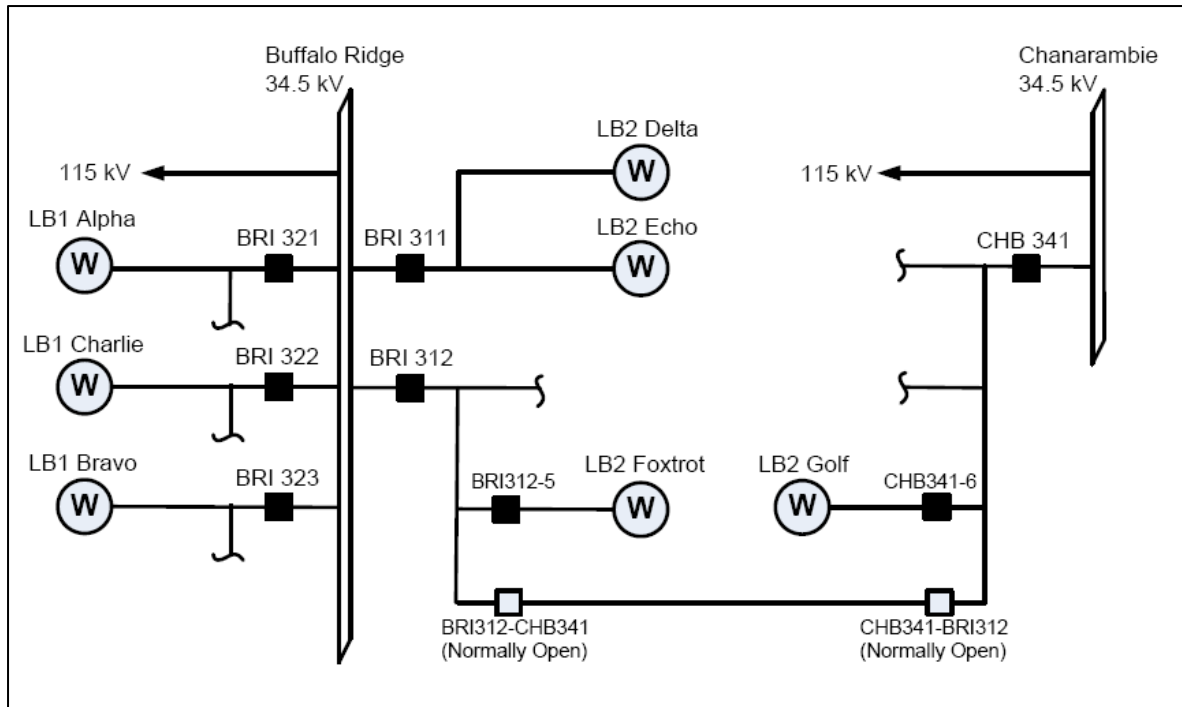
a. Lake Benton I and II

Background

The Lake Benton I project is a 107.25 MW wind generation facility constructed and completed in 1998. The Lake Benton II project is a 103.5 MW wind generation facility constructed and completed in 2000. Both projects are located in the Buffalo Ridge area of southwest Minnesota. Lake Benton I and Lake Benton II are separately owned and operated, and the Company purchases power from them under two separate contracts.

Lake Benton I and II are configured so that the energy they produce is “collected” by a series of feeder collection lines that bring the power to two local area substations—Buffalo Ridge and Chanarambie. There are three feeder lines which connect Lake Benton I to the Buffalo Ridge Substation. The collection system for the Lake Benton II project delivers energy via four feeder lines—three connected to the Buffalo Ridge substation and one connected to the Chanarambie substation. A simplified diagram of the involved feeder lines and substations for Lake Benton I and II is provided in Figure 1 below. As with all electric transmitting equipment, the feeder lines must be operated at an appropriate voltage level to ensure continued safe and reliable operation of the wind generators and the transmission system to which they interconnect.

Figure 1: Buffalo Ridge (BRI) and Chanarambie (CHB) Feeder Diagram



These two wind facilities are among the oldest connected to our system which brings with them certain technical challenges. Unlike modern wind turbines which have built-in voltage regulators, the turbine generators used in the Lake Benton projects have limited ability to regulate voltage. Capacitor banks provide voltage support and keep the voltage at an acceptable level for the wind generation connected to each feeder. Therefore, capacitor banks were installed along the length of the Buffalo Ridge area feeder lines. Without the capacitors, the feeders can experience unacceptable voltage levels which will result in tripping the wind turbine generators off-line.³

In addition to the challenges presented by the Lake Benton I and II wind turbines, the pole mounted capacitor banks had technical limitations due to their vintage. When this equipment was installed, the capacitor controllers did not have the capability to provide remote indication of capacitor malfunction, meaning our operators were not alerted to a capacitor bank failure. Generally, operating issues with a few capacitors does not result in low voltage conditions on the feeders. However, if there is a sufficient amount of issues occurring with a sufficient number of capacitor banks, this can result in low voltage conditions which could necessitate a curtailment of the affected wind generators.

³ In addition to the feeder lines, Xcel Energy designed, owns and maintains the capacitors along these feeders.

Low Voltage Mitigation Plan

For many years, we experienced nominal low voltage issues. We periodically inspected and monitored the performance of the capacitor banks. Additionally, our operations staff works closely with our wind vendors to provide us additional sources of reliable information about the local area circumstances. When the area wind generators are impacted by low voltage conditions, the operations staff for the wind projects typically contacts Xcel Energy.⁴ A maintenance effort would then be initiated to inspect and make a repair or replacement when any failed components or capacitors are identified. After the capacitor banks are inspected and repaired, the curtailments associated with low voltage caused by those capacitors would typically cease, although further curtailment could occur if other capacitors on that feeder experience problems.

Our experience indicated the Buffalo Ridge Feeder capacitor banks generally encountered the following types of issues:

- Breakdown of the connection of primary leads of the capacitors to the feeder line;
- Failures of the 34.5 kV fused disconnects that provide local protection of the capacitors; and
- Malfunction of the capacitor controllers, which provide the signals to turn the capacitors on and off.

We proactively sought to implement solutions to common problems. For example, the original printed circuit boards in the capacitor controllers were susceptible to failure from voltage transients⁵ associated with lightning strikes. In an attempt to improve the performance of the capacitor banks, the printed circuit board on the controllers was redesigned and replaced.

In response to increasing capacitor repair and maintenance needs, in 2010, we engaged an engineering consultant to assist us in evaluating the wind generation feeder lines and the capacitor banks. A report, completed in February 2011, concluded:

- Distributed capacitor banks are needed to support voltage on the wind collector lines;

⁴ This arrangement had allowed us to successfully address issues that arose in the area and resulted in few curtailment payments due to capacitor failures. Between July 2006 and June 2011, we have identified curtailment payments possibly due to capacitor failures totaling approximately \$66,000. That said, during this time we did begin to see common issues arising with the capacitor banks on these feeders.

⁵ Fast, short duration voltage spikes.

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- The capacitors in place, when they are operating as designed, should provide adequate voltage support;
- The existing units should be replaced and spread out along the lines similar to the installation at the time;
- Better lightning protection and perhaps a modified design would likely improve reliability; and
- Large-scale reconfiguration of the wind collection system should be considered.

The Company then undertook a Capacitor Replacement Project. Design and engineering of this project was underway with the goal of installing a more durable capacitor system to be completed by the end of June 2012.

While work was in progress, a tornado hit the area in July 2011, damaging multiple feeder lines and the surrounding 115 kV transmission lines.⁶ At the time of the storm, the new capacitors had not yet been installed. We focused our attention away from the Capacitor Replacement Project and towards repairing the storm damage. We rebuilt transmission equipment which caused significant delay in the Capacitor Replacement Project. The delay could not be avoided as modeling analysis, coordination and equipment tuning was needed after all feeder lines were repaired and energized in order to identify proper capacitor sizing based on the rebuilt equipment.

We note that from July 1, 2011 through October 23, 2011 while we were working to repair the storm damage, we declared a force majeure event under the terms of the relevant power purchase agreements to relieve the obligation to make curtailment payments during this period. The force majeure declaration was unchallenged and effective for that period.

Description of Events

In summary, the Code 4-Other curtailment events recorded for Lake Benton I and Lake Benton II during the time period identified in Table 1 above were related to low voltage conditions on Buffalo Ridge feeder circuits and the delay in implementing the Capacitor Replacement Project because of the damage resulting from a July 1, 2011 tornado.

Lake Benton I

Code 4 curtailments recorded for Lake Benton I in October 2011, January 2012 and

⁶ The following facilities were all impacted and forced out of service by the July 2011 tornado: Yankee 321 Feeder, Yankee 322 Feeder, Buffalo Ridge–Pipestone 115 kV line, Buffalo Ridge–Yankee 115 kV line, Buffalo Ridge 311 Feeder, Buffalo Ridge 312 Feeder, Buffalo Ridge 313 Feeder, Buffalo Ridge 321 Feeder, Buffalo Ridge 322 Feeder, Buffalo Ridge 323 Feeder, Brookings County–Yankee #2 115 kV line, Buffalo Ridge–Lake Yankton 115 kV line, Lake Yankton–Lyon County #1 115 kV line, Lake Yankton–Lyon County #2 115 kV line, and Lake Yankton–Marshall SW 115 kV line.

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February 2012 were related to low voltage conditions on Buffalo Ridge feeder circuits BRI 321 and BRI 323 caused by issues with the installed capacitor banks. We identified [TRADE SECRET BEGINS TRADE SECRET ENDS] in “Reason Code 4 – Other” curtailment payments made to the Lake Benton I project.

Two of the Buffalo Ridge Feeders which deliver energy from the Lake Benton I project did experience some damage in the July 2011 tornado event, but were not out of service for an extended period of time. Consequently, once these specific feeders were repaired, wind energy produced by Lake Benton I was able to be delivered into the system. However, the performance modeling needed to determine proper sizing for area capacitors in continuation of the Capacitor Replacement Project initiated prior to the July 1 storm was not completed until all area feeders were re-energized. Subsequent to the required modeling work, capacitors were ordered in early December 2011 and the equipment began arriving February 17, 2012. The capacitor banks associated with these Lake Benton I feeders were installed and tuning completed on March 23, 2012 (BRI 323) and March 28, 2012 (BRI 321).

We believe we acted prudently and everything possible was being done to improve operations and avoid curtailment for Lake Benton I. Actions to improve performance of the equipment designed to support area voltage at an acceptable level for the wind turbines were underway but implementation was delayed by the unforeseeable July 2011 storm producing local damage. For these reasons, the Code 4 curtailment payments were prudently incurred.

Lake Benton II

“Reason Code 4 – Other” curtailments recorded for Lake Benton II during the time periods identified in Table 1 were related to low voltage conditions on Buffalo Ridge Feeder circuit BRI 312. The Company has identified [TRADE SECRET BEGINS TRADE SECRET ENDS] in Code 4 curtailment payments made to the Lake Benton II project that are associated with low voltage conditions related to the capacitors, or lack of capacitors, on Buffalo Ridge Feeder BRI 312.

One of the four feeder lines collecting energy from the Lake Benton II wind turbines (Buffalo Ridge Feeder BRI 312) was destroyed during the July 1, 2011 tornado and had to be entirely rebuilt. We exercised a contract term in the Lake Benton II power purchase agreement and declared a Force Majeure event under which there could be no claims for payment for lost energy under this condition and began working on repair.

The feeder was redesigned and rebuilt with steel poles with vertical post insulators along with a larger conductor resulting in a higher rating of approximately 72 MVA.

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The construction of the line portion of the feeder rebuild was completed on October 23, 2011. The surrounding 115 kV transmission lines had been restored earlier and BRI 312 was the last feeder to be energized in storm recovery work. Once this was complete the Force Majeure declaration ended. However, as was the case with Lake Benton I feeders, BRI 312 was part of an ongoing Capacitor Replacement Project which had not yet been completed.

Upon completion of work on BRI 312, Lake Benton II was allowed to go back into service on October 23, 2011 since the feeder was able to support some level of wind generation without the capacitors installed. However, because capacitor banks still needed to be installed to support full operation, some curtailment of the Lake Benton II project was necessary.

To mitigate the amounts of generation to be curtailed, we temporarily reconfigured the Lake Benton II project to allow some output from wind turbines connected to BRI 312. By design, one of the feeders serving the Lake Benton II project is also capable of being switched so that it feeds into Chanarambie substation instead of the Buffalo Ridge substation. To protect the wind turbines from any possible damage that could occur from low voltage and minimize the amount of curtailment payments that may result, in November 2011 we reconfigured the breakers/switches to allow more of wind generation from Lake Benton II to be delivered into Chanarambie. This action allowed more energy to be generated prior to the capacitor banks being installed, mitigating a portion of the curtailment payments which would otherwise have resulted.

While the Chanarambie substation did not have the capability to accommodate all the existing wind generation connected to it along with Lake Benton II because of thermal line ratings, it was able to accommodate some of the Lake Benton II wind generation. This reconfiguration was maintained until the Capacitor Replacement Project was completed. All capacitor banks were installed and tuned by April 11, 2012 and the feeder serving the Lake Benton II project was switched back to the Buffalo Ridge substation.

Actions to improve performance of the equipment designed to support area voltage at an acceptable level for the wind turbines were underway but implementation was delayed by local storm damage. Additionally, the destroyed feeder was rebuilt to increased standards for better performance. We believe we acted prudently and everything possible was being done to improve operations and avoid curtailments for Lake Benton II. Taking advantage of electrical connections and switching operations to another substation allowed partial output from the project and helped minimize

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curtailment payments that might have otherwise been claimed. For these reasons, we believe the Code 4 curtailment payments were prudently incurred.

b. Fenton (FTN)

As reported in our AAA Report, **[TRADE SECRET BEGINS
TRADE SECRET ENDS]** were curtailed at Fenton Wind under “Reason Code 4 – Other” in March 2012. At this time, the Nobles County–Split Rock 345 kV line was out of service for scheduled transmission line construction. On March 2, 2012, the Lakefield Junction–Nobles County 345 kV line tripped and stayed out due to galloping conductors. High wind generation, combined with the unavailability of these two 345 kV output paths, resulted in declining voltages in the area. The system operators took action to mitigate the voltage concerns using whatever electrical reactive devices were available, but eventually had to open two Fenton breakers to reduce and remove generation from the network in order to maintain system stability, which resulted in the curtailed generation.

The curtailment event at Fenton was considered extraordinary in that it was a combination of weather and a previously planned construction outage, thus it was classified by the operators under “Reason Code 4 – Other” as it seemed unique enough to separately identify.

The Company’s transmission line design criteria include requirements to minimize and mitigate the impact of galloping conductors. The recently completed Split Rock–Nobles County–Lakefield Junction 345 kV line was designed and constructed to these standards. However, the severity of the galloping event on March 2, 2012 exceeded even the design guide standards and resulted in the tripping of the line.

In order to minimize or prevent similar galloping events in the future, the transmission engineering group is investigating the use of anti-galloping devices and different conductors or conductor configurations. We expect to complete our review and identify an anti-galloping plan by the end of 2013.

We believe we have taken prudent actions to avoid curtailment conditions due to this type of circumstance. Given the weather-related nature of the damage which was not within the Company’s control, we believe this situation could not have been avoided and is similar to other system limitations which occur periodically, causing the need to reduce energy production when the generator might have otherwise been producing energy. Furthermore, the Company has been proactive in planning transmission improvements for increased generation outlet in southwestern Minnesota and included design features believed necessary.

B. O&M Costs

The Department requested that we provide updated information on generation O&M costs being recovered in the most recent rate case as well as actual 2012 generation O&M costs.

We have an electric rate case pending in Docket No. E002/GR-12-961, filed on November 2, 2012 with a 2013 test year. Table 2 shows the NSPM Electric generation maintenance costs for the 2013 test year and 2012 actual:

Table 2: O&M Costs

	Generation Maintenance O&M Costs
2013 Test Year	\$ 173,413,367
2012 Actual	\$ 176,598,518

The costs in Table 2 above are comparable to the data compiled in Table 3 in the Department's review, which were not adjusted for the Interchange Agreement. We also note that the costs are not the entirety of the Company's O&M costs, but only those associated with our maintenance costs of generation plants.

C. Forced Outages

In response to the Department's request, we provide a discussion of how each of the forced outages in FYE12 could have been avoided or alleviated. For each forced outage, Attachment A contains the following details⁷:

- a description of the equipment that resulted in the forced outage;
- a description of the equipment failure;
- the change in energy costs resulting from the outage;
- the failure history during the reporting period; and
- the steps taken to alleviate reoccurrence of the outage.

The Company has a comprehensive, cost-effective generation maintenance plan to keep its generation fleet available and reliable, and to minimize forced outages. Nonetheless, forced outages will occur when dealing with systems as complex as

⁷ The information is presented in Minnesota Power's outage report format for Attachment A, as specified by the Department in its review.

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electric generation, especially when that generation fleet is aging. As a result of our generation maintenance program, our power plants have been well-managed and maintained, and they provide adequate service for our customers.

As part of our prior electric AAA proceeding for FYE11, questions were asked about the steps we have taken to learn best practices from other utilities that operate generation assets and the process changes we have made to improve the performance of our generation fleet.

Generation Operating Model

To improve upon our plant processes and to unify our power plants to achieve operational excellence through accountability, standardization, technical excellence and organizational alignment, the Energy Supply group launched a Generation Operating Model in late 2011. The initiative began with visits to other companies' generation plants located across the county in order to benchmark best practices and learn from other successful plants' operations. The Operating Model is now applied to standardize Energy Supply's business in Operations, Technical Services, and Engineering & Construction.

As part of the Generation Operating Model, we have developed the "Energy Supply Playbook" as our guiding component. The Playbook contains the principles we follow to manage, operate and maintain Xcel Energy's generating assets. In addition, it provides for the alignment of resources and the standardization of the key elements in our operation to help us identify best practices, capture synergies, reduce costs and promote excellence. The Playbook also reinforces the approach that operating processes be performed similarly across the entire Xcel Energy fleet to enable us to be more effective.

As we developed the Generation Operating Model, Human Performance emerged as one component of our operations which presented an opportunity for improvement. We sought to engender behaviors that support safe, reliable, and predictable operation by reducing the frequency and severity of events caused by human errors, such as those caused by individual behavior, management/leadership practices, or organizational processes and values. We are implementing several Human Performance tools, such as:

- Self Checking (STAR, Stop, Think, Act, Review)
- Procedural adherence and use
- STOP when unsure
- Co-Worker Coaching

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- Independent Verification
- “Are you Ready” checklist
- 3-Part Communication
- Pre-job briefs and shift turnover

We appreciate there is interest in how we share information around the Company and with other utilities. Information sharing is promoted and facilitated throughout our business areas and operating companies. One organized place where this occurs is through the Operations Council with senior management representation from various parts of the Company. The charge of this group meeting monthly is to:

- Identify and focus on critical operational issues;
- Promote cross-functional dialog on system status, productivity, reliability and continuous improvement;
- Address operational issues as they arise and implement solutions.

Another example of information sharing is the annual gathering of our generation experts at the Xcel Energy Boiler Conference. The meeting locations rotate throughout the Xcel Energy operating companies to bring together boiler engineers and other technical experts working with all our fossil fleet to discuss common generation boiler issues; sharing knowledge and best practices. With our aging fleet, boiler tube leaks continue to be one of our highest unplanned outage contributors. Moving forward, capital projects to replace large boiler sections will be necessary to avoid repeat failures.

A recent feature implemented to facilitate sharing lessons learned across all of Xcel Energy’s operating companies is a monthly Energy Supply newsletter distributed within Xcel Energy. A recent newsletter highlighted the Harrington plant maintenance overhaul which marked the first deployment of our centralized overhaul management approach under the Generation Operating Model. The Harrington plant is located in the Southwest Public Service territory outside of Amarillo, TX. The newsletter highlighted notable successes at Harrington, such as a greater use of common work practices and information sharing; standardized tracking and reporting, and increased sharing of technical ideas and resources to implement best practices. Lessons learned during the overhaul noted in the newsletter include the need to clarify roles and responsibilities; the need for more detailed planning and scheduling before shutdown of the unit; the need for thorough equipment inspections during an overhaul; and Improved communication and engagement. To further learn from experiences, a link to video taken during the overhaul process was posted and made available to all Energy Supply staff. These lessons learned are being applied across the

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Xcel Energy system to improve our processes during maintenance overhauls, to work more cohesively as an Energy Supply team and to improve fleet performance.

Our FYE12 forced outage incidents can generally be grouped into the following four themes or categories:

1. Boiler Tube Leaks
2. Human Performance events
3. Quality Assurance / Quality Control issues
4. Work Management process improvements

Upon examination of these incidents, we identified new equipment design shortcomings and external service material quality as the second and third top contributors to the overall fleet unplanned outage events across all service territories. For example, the August 16-17, 2011 outage at Sherco Unit 1 was due to a leak initiated from a crack which likely started in the bending process during original manufacturing. To prevent similar outages due to material quality, we have implemented more rigorous Quality Assurance/Quality Control requirements in our material supply contracts and hold points with inspections during the manufacturing of boiler replacement components. We are now actively preventing inferior products from being installed in our plants. As a result of this new rigor in our processes, we have already seen a decrease in the number of forced outages due to manufacturing quality in the first quarter of 2013.

As part of the Generation Operating Model, work management process improvements are being implemented to reduce repeat failures of critical equipment by implementing standard Preventive Maintenance (PM) actions prior to failure. A PM is a scheduled activity with the purpose to prevent future breakdown or corrective maintenance. An example of this is our critical motor PM initiative that identified PM actions at specific time intervals for large motors and was completed last year.

Outage Event Documentation

We take every plant outage very seriously, and have documented a comprehensive corporate policy and procedure for assessing and analyzing the causes of an outage. As documented in the policy, all unplanned unit outages or unit derates which limit the unit as required for GADS reporting requires an Event Assessment Report to be completed. The analysis documents all pertinent information associated with the event and includes interviews with personnel involved, work orders resulting from the incident, and log entries. The event is typically fully assessed within 30 calendar days of the incident unless metallurgical analysis or outside consultants are required to determine the root cause.

As a result of an outage event, we:

- conduct a root cause analysis to determine what caused the forced outage and document the incident in writing;
- document all corrective actions taken in order to bring the plant back online; and
- meet regularly to discuss corrective actions and repair progress, tracking until the issue is resolved.

The event documentation and meetings are intended to help us understand why an outage occurred and to prevent similar occurrences in the future.

Initiatives in Practice

As part of our event assessment process, corrective actions from outage or derate events often includes a revision of the preventive maintenance frequency or replacement for a critical piece of equipment to avoid another failure. A specific example relates to the condition of 27 high pressure feedwater heaters on Sherco 2. As a result of our event assessment process, we took a proactive approach to replace the 17 high pressure feedwater heaters on Sherco 1 (same heater as Unit 2) during the 2012 overhaul to avoid similar failures.

In addition, the Allen S King plant performed a capital replacement of the reheat section of its boiler this spring in an effort to reduce repeat failures. Implementing the enhanced boiler QA/QC inspections during this project resulted in zero forced outages since the replacement. Similarly, to reduce reheat tube leak failures, boiler reheat section replacements are planned for Sherco 1, 2 and 3 in 2018, 2019 and 2020, respectively.

The effectiveness of human performance initiatives are difficult to measure since success stories are seldom communicated. However, we are measuring human performance incident rates, and we are trending this to better understand future actions.

The effectiveness of preventive maintenance initiatives is also difficult to measure since success stories are seldom communicated and results take longer to realize. The best indicator for PM effectiveness is our Unplanned Outage Rate, which has been trending downward and has been in the top quartile of industry performance for the last two years.

In conclusion, we are taking actions to improve our plant and human performance, to share information and learn from the experiences at each of our unique generating facilities and apply best practices wherever possible.

D. MISO Day 1 and Day 2 Markets

1. Day Ahead and Real Time Energy

In its review, the Department asked the Company to explain the reason that our Day Ahead and Real Time Energy costs were about \$8.6 million higher, or a 6.3 percent increase, in FYE12 (\$146.1 million) compared to FYE11 (\$137.5 million).

This increase coincided with a 5.8 percent increase in energy (5,266,289 MWh to 5,570,119 MWh with the dollars per MWh cost for the two periods being \$26.10/MWh in FYE11 and \$26.22/MWh in FYE12.

The primary driver for this increase in per MWh costs was the decrease in the Day Ahead Non-Asset Energy credit. The credit is associated with bilateral contracts with counterparties. For these contracts, we pay for the energy to the counterparty based off of the power purchase agreement and the energy is delivered to us through the MISO market, where we receive a credit for the energy delivered. The biggest driver in decreased credits is due to a change in the market price. Because the marginal energy component of LMP decreased, the associated payment decreased. Another change between FYE11 and FYE12 was the expiration of the 40 MW purchase from Cyprus Silver Bay. Because the underlying contract expired, we stopped paying the counterparty and the associated market payments also stopped.

2. Real Time Revenue Neutrality

The Department also requested further information about the MISO Real Time Revenue Neutrality Uplift charge type in its review. Our Real Time Revenue Neutrality Uplift (RNU) costs were \$10.9 million in FYE12 compared to \$6.1 million in FYE11.

Many components make up this cost, and the change in cost has multiple drivers. As MISO is required to be revenue neutral, this charge type is used to account for any revenue inadequacy and allocates those costs to load. At times, as RNU goes up, other costs might go down, or visa versa. For instance, market to market settlements with PJM go through RNU. When PJM pays MISO through this charge type, there is an offsetting cost of redispatch that is paid by MISO load. This payment may decrease, but the costs will also decrease. NSP, along with other stakeholders, pushes

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MISO for continual improvement and monitoring of some of the drivers of this charge. As noted below the MISO Independent Market Monitor (IMM), also monitors this charge, and makes operational recommendations to mitigate excursions. NSP has also supported one of the short-term incentive goals for MISO management to be linked to market efficiency, which is in turn linked to RNU.

The main driver for the cost change was the real time congestion sub-component. On a MISO footprint-wide basis, this sub-component changed from a \$17.3 million credit to a \$15.5 million charge. The many drivers of real time congestion costs cannot be controlled by the Company. The overall driver for the change in costs is the difference between MISO's real time actions and models compared to MISO's day ahead models and expected flows. MISO's discontinuation of relaxing internal constraints contributed to the real time congestion. This change resulted in real time prices reaching the marginal value limit for constraints that bound in real time, but were not modeled or did not bind in the day ahead model. The Company mitigated the exposure to real time price volatility by purchasing its expected load in the day ahead market and by working with MISO to decrease the marginal value limits of lower voltage constraints, thus decreasing this charge.

In addition, there was significant real time congestion in March 2012. The MISO IMM attributed the significant increase to "congestion out of the West and in Michigan. External constraints were substantial in March, including TLRs [Transmission Loading Relief] called by IESO [Independent Electricity System Operator] for outages affecting the Ontario interface and two SPP constraints." The MISO IMM recommended that the re-dispatch MISO performs for external constraints should be monitored because it is not efficient and can generate significant costs. After the IMM made its recommendation, the March 2012 level of costs (\$96 million) has not since been reached. For additional information, please see the IMM Monthly Market Metrics Report for March 2012 which can be found at the following address:

<https://www.midwestiso.org/Library/Repository/Meeting%20Material/Stakeholder/BOD/Markets%20Committee/2012/20120418/20120418%20Markets%20Committee%20of%20the%20BOD%20Item%2003%20IMM%20Report.pdf>

3. *Allocation Method*

The Department requested that we clarify if any of our allocation methods have changed during the 2011-2012 reporting period and if so, explain the nature of these changes.

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We confirm that our allocation methods of MISO Day 2 charges across our retail, asset based wholesale/intersystem and non-asset based wholesale/intersystem have not changed during the 2011-2012 AAA reporting period.

4. *Ancillary Services Market (ASM)*

The Department recommended that we provide a brief narrative on ASM at the MISO level and at the Company level consistent with our report in our FYE11 AAA report.

During the 2011-2012 AAA reporting period, MISO continued to operate the electric system reliably and has exceeded compliance thresholds for all North American Electric Reliability Corporation (NERC) reliability standards to which they are subject. The MISO IMM, which is tasked with monitoring both behavior of the Market Participants and the operation of the market, noted in its 2011 State of the Market Report that the “ASM markets continue to perform as expected with no significant issues in 2011. Since their inception in 2009, jointly-optimized ancillary service markets have produced significant benefits, leading to improved flexibility and lower costs of satisfying the systems reliability needs.”

The Market Monitor also noted an overall six to 10 percent decrease in regulation prices when compared to 2010 due primarily to a reduction in spinning reserve shortages and a reduction in opportunity costs of providing reserves. Reduction in spinning reserve was coincident with the departure of FirstEnergy, which had the most non-conforming load that can change abruptly and cause transitory shortages. Opportunity costs decreased in 2011 as energy prices fell due to lower natural gas prices. The slight increase in contingency reserve deployment charges was due to an issue with a power purchase generator, LS Power, which has since been remedied.⁸ The slight decrease of excessive deficient deployment charges between FYE11 and FYE12 can be attributed to several factors. Variance analysis indicates that the decrease is partially due to Sherco Unit 2 and the Wheaton plant operating less, and so having less opportunity to incur these charges.

We confirm we will provide this information in future AAA filings, as required by the Commission’s August 23, 2010 ASM Order.

⁸ LS Power paid \$11,067 in October 2011 for Cottage Groves’ spin failure which included penalty and lost opportunity costs which NSP passed to customers through the December 2011 FCA.

E. Sherco 3

Our Sherco 3 update filed on July 26, 2013 in Docket No. E002/AA-11-1173, stated our detailed internal engineering examination of the final root cause analysis report was being completed and reviewed with internal stakeholders. We anticipate releasing the report to regulators in early September.

Given that the final root cause analysis report has not yet been reviewed by the Department and other interested parties, the Department recommended in its Review that the Commission preserve the determination of cost recovery related to the replacement power costs related to the Sherco Unit 3 extended plant outage until the next AAA filing made by September 1, 2013 for FYE13. The Company agrees with this recommendation.

F. Replacement Power Costs

In our Sherco Unit 3 restoration update filed on November 7, 2012 in Docket No. E002/AA-11-1173, we explained that to better align our forecast and our actual costs, as well estimate the real impact to ratepayers, we changed our calculation methodology for estimating replacement power costs resulting from an outage.

We now recognize the cost credits in these situations as we believe this is the correct way to calculate the true replacement power costs. For example, in hours where the MISO Locational Marginal Price (LMP) was below the production cost at Sherco 3, we reflect the energy cost savings resulting from the fact Sherco 3 was entirely off-line. To implement this revision, we revised our monthly FCA reports, which calculate outage costs, beginning with the FCA report filed on September 28, 2012 in Docket No E002/AA- 12-1057, which provided actual outage costs for August 2012 using the new methodology. In our November 7 filing, we also indicated we would file revised calculations of outage costs for the FYE12 AAA reporting period to reflect the new methodology. These updated outage replacement power cost calculations are included as Attachment B to this filing.

1. Background of Replacement Power

The outage of the Sherco 3 unit has required the Company to replace that generation with other resources, either by dispatching other NSP System units or purchasing in the MISO energy market. Xcel Energy offers our base load coal units, including Sherco 3, in the MISO market as “Must Run” facilities. This means that regardless of whether or not the cost to run the unit exceeds the MISO market locational marginal price (LMP), it is assumed the unit will be online at some level at all times. This is

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because baseload units like Sherco 3 (and our nuclear plants) are not designed to be entirely removed from service once they are on-line, and there are limitations on how much we can change the output of an individual generator between hours without potentially damaging the unit. We manage the output of the units to take advantage of lower cost replacement energy when possible, while seeking to avoid higher O&M costs or unplanned outages (and resulting replacement energy costs) that could occur if the baseload units are forced to run in a manner inconsistent with their design parameters.

We calculate our replacement energy cost for our Must Run units by taking the difference between the MISO hourly LMP price and the average hourly cost it takes to run the unit at the expected load for that hour. Historically, we reported zero outage costs in cases where our costs to run the specific unit would have exceeded the LMP price. In other words, we did not take a credit when LMP prices were below the cost of the specific unit and the Company was actually saving costs to ratepayers by having the unit offline. For example if a unit cost \$15/MWh and the LMP for that hour was \$10/MWh, there would technically be a \$5/MWh benefit to our ratepayers by not running the unit. However, instead of recognizing it as a \$5/MWh credit when calculating our replacement energy costs for that hour, we assigned a benefit of zero.

As described above, we believe incorporating any potential cost savings into the method for calculating an estimate of replacement power costs resulting from an outage, produces a more complete cost picture.

G. Schedule 10 and Allocation Factor

The Department recommended that the Commission require utilities to provide in the initial filing of all future electric AAA reports the Minnesota-jurisdictional Schedule 10 costs together with the allocation factor used and support for why the allocator is reasonable. Additionally, the Department recommended that the Commission require utilities to provide information to support MISO Schedule 10 cost increases of five percent or higher over the prior year costs, including explanation of benefits received by customers for these added costs.

The Company agrees to provide the Minnesota-jurisdictional Schedule 10 costs and the allocator used. We also agree to provide supporting information regarding MISO Schedule 10 cost increases exceeding five percent. However, we note that the MISO Schedule 10 costs are recovered through base rates and are subject to review in those proceedings. To ensure consistency between the AAA proceedings and future base

rate proceedings, the Company requests that any proposed changes to the allocator be addressed in base rate proceedings.

H. FCA Incentive Proposal

We appreciate the Department's interest in exploring improvements to the FCA mechanism. Given the significant amount of dollars for fuel and purchased energy costs flowing through the fuel clause mechanisms of each utility, it is appropriate to periodically review whether utilities are taking suitable actions to minimize these costs that are automatically passed on to the ratepayers.

There have been multiple previous efforts at examining the notion of whether utilities are motivated to keep costs low and whether a change to the FCA mechanism may be appropriate. Ideas and concepts were discussed in the generic fuel clause docket of 2003⁹ and again revisited after our rate cases in 2008 and 2010, but ultimately no change resulted. During this proceeding, we intend to work with the Department to develop a proposal supportive of effective incentive principles, as described further below.

By design, the FCA permits utilities to recover costs largely out of our control, outside of a rate case. Customers are billed their share of volumes and cost of fuel, dollar for dollar; they do not pay any more for these items than the utility incurs to produce and/or procure the energy on their behalf. Fuel clause mechanisms provide significant benefit to utilities, regulators and ratepayers by creating a method for recovery of certain volatile costs. The utility is kept whole with that portion of its costs; ratepayers pay their share of costs according to how much electricity they use; and regulators are able to focus review on these limited types of costs on a regular basis, rather than during a rate case where all costs are reviewed.

Under NSP's current FCA calculation method, fuel price volatility is reflected on customers' bills relatively close to when the cost is incurred. Thus, customers are provided fuel price points fairly close to their electric usage and have a reasonable opportunity to adjust their electric usage with the incentive of reducing their next bill, if they choose. Similarly, any potential FCA mechanism should provide utilities the opportunity to earn an incentive for their actions associated with activities that are under their control.

We believe the principles of an effective fuel clause incentive:

⁹ Docket No. E999/CI-03-802)

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- Rewards desired actions and outcomes
- Leads to measurable results
- Provides transparency and predictability
- Limits risk to customers and stakeholders
- Aligns compatibly with current business climate
- Avoids producing unintended results
- Evolves, subject to evaluation.

Incentives should motivate action with outcomes that are good for all stakeholders. However, attention to safe, reliable, and reasonably-priced service should be kept in balance and not be inadvertently skewed towards reducing cost without regard for other factors. The outcome of an incentive should not create ‘winners’ and ‘losers’ based on conditions utilities cannot influence. As illustrated further below, we do not believe the Department’s proposal will achieve their intended outcome of incenting utilities to take action to minimize energy costs on behalf of ratepayers. Rather, the proposal produces volatile and random results which would be quite disruptive, potentially changing the risk and reward relationship we now have.

The general effect of the Department’s proposal is to normalize FCA recovery using monthly patterns derived from averages of the prior three year period, setting and fixing this level during a rate case with no adjustment between rate cases. While this may set a limitation of monthly FCA costs, it would be largely based on costs the Company does not control, such as the price of fuel, and not recognize new events or changed circumstances, diluting the impact of those events and circumstances until three or more years had passed. The random nature of weather impacts and fuel prices alone could blot out any offsetting cost reductions the utility could potentially make. Price swings are driven by events we have no control over, thus there is no meaningful incentive to manage costs under the Department’s proposal.

Consider the MERP project for example; coal use was retired at the High Bridge and Riverside plants by the end of 2008, however, under the Department’s proposal, it would not be until 2012 when the FCA would recognize the use of natural gas at these facilities. Prices for natural gas and the MISO market dropped sharply in 2009 but ratepayers would not have benefitted from the lower prices until several years later since the FCA level would be based on out of date information. Another example is the addition of power purchases to fulfill Minnesota’s renewable energy policy such as the power purchase agreements with Fibrominn and Laurentian, or other long-term contracts such as with Manitoba Hydro. These transactions were entered into for the benefit of ratepayers and Minnesota state policy, and contractually contain annual price escalation; yet actual cost recovery would not be possible under

the Department’s proposal because of the use of an averaging methodology, not lack of cost management diligence on our part.

To illustrate the random effect, we applied the 3-year averaging proposal to our most recent 5-year period of FCA data, identified the major factors influencing price during the timeframe, and examined the overall effect on the Company’s total cost of doing business. In our back-cast of the Department’s proposal, for the five year period 2008-2012, we would have under-recovered fuel and purchased power cost by nearly \$100 million. Using information reported in our annual Minnesota Jurisdictional Reports, we modified the Company’s total revenue by the amount of change to FCA recovery and recalculated the earned return. The resulting impact on earned ROE to an individual year during this timeframe ranges between negative 241 basis points to positive 126 basis points as shown in the Table 3 below.

Table 3: Impact of Department’s Proposal

	Change to FCA Recovery (\$M)	Actual ROE Weather Normalized (%)	Realized W/N ROE Under DOC FCA Incentive Proposal (%)	Difference (%)
2008	-\$94.5	10.19	7.78	-2.41
2009	+\$54.4	10.18	11.44	+1.26
2010	+\$32.8	8.78	9.48	+0.70
2011	-\$26.5	9.08	8.56	-0.52
2012	-\$63.1	8.20	7.05	-1.15
Period Total	-\$96.9			

We investigated the primary drivers influencing our FCA during this same period and generally found these cost drivers could be grouped into the following three categories: (1) commodity fuel and transportation cost, (2) resource supply mix, and (3) state policy. Table 4 provides the main factors impacting our FCA during 2008-2012.

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Table 4: Main Factors Impacting FCA from 2008-2012

2008	2009	2010	2011	2012
<ul style="list-style-type: none"> Additional biomass purchases (Fibrominn & Laurentian) 	<ul style="list-style-type: none"> Additional biomass purchases (Fibrominn, Laurentian and Rahr Malting) 	<ul style="list-style-type: none"> Additional biomass purchases (Fibrominn, Laurentian and Rahr Malting) 		
<ul style="list-style-type: none"> Additional wind purchases (Fenton, MinnDakota, CBED) 	<ul style="list-style-type: none"> Additional wind purchases (Fenton, MinnDakota, CBED) 	<ul style="list-style-type: none"> Additional wind purchases (Fenton, MinnDakota, CBED) 	<ul style="list-style-type: none"> Additional wind purchases - CBED (generally higher prices) 	<ul style="list-style-type: none"> Additional wind purchases - CBED & Prairie Rose (generally higher prices)
	<ul style="list-style-type: none"> Grand Meadow wind online 	<ul style="list-style-type: none"> Grand Meadow and Nobles wind online 	<ul style="list-style-type: none"> Grand Meadow and Nobles wind online 	<ul style="list-style-type: none"> Grand Meadow and Nobles wind online
<ul style="list-style-type: none"> Higher coal prices due to increased transport cost (diesel surcharge) 	<ul style="list-style-type: none"> Higher coal prices due to increased transport cost (diesel surcharge) 	<ul style="list-style-type: none"> Higher coal and rail prices 	<ul style="list-style-type: none"> Higher coal and rail prices 	<ul style="list-style-type: none"> Higher coal and rail prices
<ul style="list-style-type: none"> Higher nuclear fuel prices 	<ul style="list-style-type: none"> Higher nuclear fuel prices 	<ul style="list-style-type: none"> Higher nuclear fuel prices 	<ul style="list-style-type: none"> Higher nuclear fuel prices 	<ul style="list-style-type: none"> Higher nuclear fuel prices
<ul style="list-style-type: none"> Higher natural gas prices 				
<ul style="list-style-type: none"> High Bridge and Riverside retired from coal use in 2007 and 2008. 	<ul style="list-style-type: none"> High Bridge and Riverside retired from coal use in 2007 and 2008. 	<ul style="list-style-type: none"> High Bridge and Riverside retired from coal use in 2007 and 2008. 		
<ul style="list-style-type: none"> Lower cost MISO market purchases as operations become smoother 	<ul style="list-style-type: none"> Lower natural gas and MISO market prices 	<ul style="list-style-type: none"> Lower natural gas and MISO market prices 	<ul style="list-style-type: none"> Lower natural gas and MISO market prices 	<ul style="list-style-type: none"> Lower natural gas and MISO market prices
		<ul style="list-style-type: none"> More planned coal maintenance 	<ul style="list-style-type: none"> More planned coal maintenance 	
		<ul style="list-style-type: none"> One nuclear refueling outage (2 nuclear refueling other yrs in period) 	<ul style="list-style-type: none"> More planned nuclear maintenance 	<ul style="list-style-type: none"> More planned nuclear maintenance
			<ul style="list-style-type: none"> Sherco 3 forced outage near year-end 	<ul style="list-style-type: none"> Sherco 3 forced outage

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In summary, other than the forced outage impact of Sherco 3 experienced in 2012 and 2013, the major events influencing the FCA were related to fuel prices, supply mix and state policy for Xcel Energy during this past five year period.

While gas prices have been fairly low, we also calculated the effect of a change in gas price to put context around gas price sensitivity. Using our current projection of gas burn amounts, if gas prices rise by \$1 or \$2 per MMBtu, the associated incremental projected 2013 fuel cost increase would be \$72 million - \$143 million. Also, with the annual contract escalation in long-term power purchase agreements, using a three year average essentially means recovery will always be roughly two years out of sync with the actual PPA price for any given year. Based on our contracts in place for the 2012-2014 period, this translates to under recovery of approximately \$10-11 million per year of costs for electricity resources used to serve our customers.

There would have been little to no opportunity for a utility to drive down fuel and purchase power costs in a material way to overcome the cost drivers shown in Table 4. The 3-year averaging proposal is simply not the right fit for motivating cost reduction. We recommend instead design of an incentive that provides meaningful motivation through reward or penalty for actions we can take to control costs and does not disrupt the current risk/reward relationship.

We do agree with and understand the Department's desire to ensure utilities are appropriately motivated to minimize costs for ratepayers, particularly with regards to generation plant performance and availability and want to participate constructively in developing such an approach. Respectfully, we request the Commission not take action to adopt the Department's FCA incentive proposal. Rather, we intend to work with the Department during this AAA proceeding to develop an incentive with the above discussed goals and principals in mind and propose an alternative option for Commission consideration.

CONCLUSION

Xcel Energy appreciates this opportunity to submit its Reply to the Department's Report. Through this Reply we have worked to provide additional information as requested by the Department. We plan to work with the Department to develop an alternate fuel clause incentive proposal during the course of this proceeding. We respectfully request that the Commission accept our FYE12 AAA Report as supplemented by this Reply.

Dated: August 26, 2013

Northern States Power Company

RESPECTFULLY SUBMITTED,

/s/

PAUL J LEHMAN
MANAGER, REGULATORY COMPLIANCE & FILINGS

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Jul-11									
Allen.S.King.1	Forced	Secondary Superheat Leaks	7/7/11 17:44	7/10/2011 1:44	Boiler Secondary Superheat tube leak	A tube in the Secondary Superheat Section split causing a steam leak contained inside the boiler.		No similar failures were reported during this reporting period	During each spring outage, King Plant performs NDE (tube thickness testing) and from that data we pad weld thinning tubes and install new tube shields.
BD25.CC	Maintenance	Gas Turbine - Boroscope Inspection	7/23/2011 0:00	7/27/2011 19:00	#6 Main Bearing Support Strut	During a scheduled preventive maintenance inspection, the #6 Main Bearing Support Strut was found to have a crack. Production Resources and Engineering evaluated the inspection data to determine risk and repair estimations for the strut issue.		This is the initiating event that continued on 10/4/2011.	The plan was to reinspect the turbine for cracks in September of 2011. Cracking was found to be reoccurring. The unit was taken out of service on 9/23/2011 for an extended period until the exhaust strut could be replaced.
BD25.CC	Forced	Inverters	7/28/2011 18:36	7/30/2011 10:30	1-2 Un-interruptible Power Supply	1-2 Un-interruptible Power Supply Circuit Board failed resulting in loss of UPS output power.		No similar failures were reported during this reporting period	The original equipment manufacturer replaced a number of piece-part circuit board level components and soldered a large number of solder joints. This UPS is scheduled to be replaced Fall 2013.
Black.Dog.4	Derate	Flood	7/5/2011 10:00	7/20/2011 11:30	Flood derate, unit had full capabilities of generation.	Road limitations did not support continued generation of ash and coal usage. This was not an outage and all generation was replaceable with gas.		Minnesota River Flooding occurred July 2011, August 2011 and June 2012 during this reporting period.	Flood procedure strategically allows for operations of the plants with deratement, replaceable with gas, to minimized bottom and fly ash generations and coal usage.
Black.Dog.4	Derate	Flood	7/20/2011 11:30	7/31/2011 23:59	Flood derate, unit had full capabilities of generation.	Road limitations did not support continued generation of ash and coal usage. This was not an outage and all generation was replaceable with gas.		Minnesota River Flooding occurred July 2011, August 2011 and June 2012 during this reporting period.	Flood procedure strategically allows for operations of the plants with deratement, replaceable with gas, to minimized bottom and fly ash generations and coal usage.
French.Is.1	Maintenance	Bed Agglomeration (fbc Only)	7/1/2011 17:34	7/5/2011 17:45	Boiler	Cleaned inbed media and inspected boiler. This is routine to prevent tube failures.		No similar failures were reported during this reporting period	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
Granite City 3	Forced	Protection Devices	7/1/2011 0:00	7/19/2011 15:44	Common Unit 3&4 Isolation pot failed	The Isolation Pot was hit by lightning		No similar failures were reported during this reporting period	As this was a weather-related issue, we took no steps to alleviate reoccurrence.
Granite City 4	Forced	Protection Devices	7/1/2011 0:00	7/19/2011 16:14	Common Unit 3&4 Isolation pot failed	The Isolation Pot was hit by lightning		No similar failures were reported during this reporting period	As this was a weather-related issue, we took no steps to alleviate reoccurrence.
HighBridge 7	Forced	HP Startup bypass system valves	7/20/2011 16:15	7/25/2011 11:00	Main Steam Bypass Valve	Bypass valve stuck partially open during operation which resulted in overheating of the bypass piping to the condenser.		A similar failure occurred in Feb. 2012. Also, Unit 8 had similar problems and experienced a scheduled maintenance outage in August 2011.	Valve plug was damaged by magnetite resulting in the valve sticking partially open. We replaced valve internals. In Feb. 2012 a different style of plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate.
HighBridge 8	Maintenance	HP Startup bypass system valves	7/23/2011 0:01	7/24/2011 16:40	Unit 7 Main Steam Bypass Valve	Unit 7 Bypass valve stuck partially open during operation which resulted in overheating of the Unit 7 bypass piping to the condenser. Unit 8 must be out of service during repairs to the Unit 7 Main Steam Bypass valve.		A similar failure occurred in Feb. 2012. Also, Unit 8 had similar problems and experienced a scheduled maintenance outage in August 2011.	Unit 7 valve plug was damaged by magnetite resulting in the valve sticking partially open. We replaced valve internals. In Feb. 2012 a different style of plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate properly.
HighBridge 9	Derate	HP Startup bypass system valves	7/20/2011 16:20	7/23/2011 0:00	Unit 7 Main Steam Bypass Valve	Unit 7 Bypass valve stuck partially open during operation which resulted in overheating of the Unit 7 bypass piping to the condenser. Unit 9 is derated while Unit 7 is unavailable.		A similar failure occurred in Feb. 2012. Also, Unit 8 had similar problems and experienced a scheduled maintenance outage in August 2011.	Unit 7 valve plug was damaged by magnetite resulting in the valve sticking partially open. We replaced valve internals. In Feb. 2012 a different style of plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate properly.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
HighBridge 9	Maintenance	HP Startup bypass system valves	7/23/2011 0:01	7/24/2011 16:20	Unit 7 Main Steam Bypass Valve	Unit 7 Bypass valve stuck partially open during operation which resulted in overheating of the Unit 7 bypass piping to the condenser. Unit 9 is unavailable while unit 7 and 8 are out of service to repair Unit 7 Main Steam Bypass valve.		A similar failure occurred in Feb. 2012. Also, Unit 8 had similar problems and experienced a scheduled maintenance outage in August 2011.	Unit 7 valve plug was damaged by magnetite resulting in the valve sticking partially open. We replaced valve internals. In Feb. 2012 a different style of plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate properly.
HighBridge 9	Derate	HP Startup bypass system valves	7/24/2011 16:21	7/25/2011 18:00	Unit 7 Main Steam Bypass Valve	Unit 7 Bypass valve stuck partially open during operation which resulted in overheating of the Unit 7 bypass piping to the condenser. Unit 9 is derated while unit 7 is unavailable.		A similar failure occurred in Feb. 2012. Also, Unit 8 had similar problems and experienced a scheduled maintenance outage in August 2011.	Unit 7 valve plug was damaged by magnetite resulting in the valve sticking partially open. We replaced valve internals. In Feb. 2012 a different style of plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate properly.
Inver Hills 5G	Forced	4000-6000-volt Circuit Breakers	7/8/2011 10:50	7/18/2011 18:05	Starting motor circuit breaker	Circuit breaker tripped due to internal wiring and mechanical problems.		No similar failures were reported during this reporting period	We inspected, repaired and cleaned circuit breaker and cubicle.
Inver Hills 6G	Maintenance	4000-6000-volt Transformers	7/14/2011 6:00	7/18/2011 16:15	Unit 5 starting motor circuit breaker. Units 5 and 6 share auxiliary power which requires Unit 6 to be isolated when Unit 5 is isolated to complete circuit breaker repairs.	Unit 5 circuit breaker tripped due to internal wiring and mechanical problems.		No similar failures were reported during this reporting period	We inspected, repaired and cleaned Unit 5 starting motor circuit breaker and cubicle.
Key City 1	Maintenance	Gas Turbine - Load Shaft And Bearings	7/1/2011 0:00	7/31/2011 23:59	Generator	Ground Alarm		No similar failures were reported during this reporting period	The decision was made to moth ball the unit in place until economically justified.
Key City 3	Forced	Gas Turbine - Turning Gear And Motor	7/22/2011 16:00	7/31/2011 23:59	Rachetting motor	The controls for the rachetting motor are non functioning.		No similar failures were reported during this reporting period	We made repairs to the motor. Given the plant's age, it is very hard to get the necessary replacement parts for this unit.
Prairie Is 1	Forced	Turbine Main Stop Valves	7/1/2011 15:49	7/2/2011 20:56	Main Turbine Stop Valve	The right main turbine stop valve failed closed due to excessive oil leakage from a failed O-ring.		No similar failures were reported during this reporting period.	Preventive Maintenance procedures were revised to ensure that the O-rings on the Stop Valves and Control Valves are replaced when the actuators are replaced.
Red.Wing.2	Forced	Cems - Opacity Monitor Problems	7/9/2011 22:00	7/13/2011 1:00	Opacity monitor calibration filter motor	Motor failed in the down position, falsely indicating high opacity.		No similar failures were reported during this reporting period	We replaced the filter motor. We have experienced no occurrences since the repair was completed.
Riverside 10	Maintenance	Condenser Tube And Water Box Cleaning	7/13/2011 10:30	7/14/2011 16:00	Unit 7 Steam Turbine Surface Condenser Circulation Water Side - The Gas Turbine can't run without steam turbine available	Biological and sedimentary fouling of the circulation water side exchanger tubes for the Unit 7 Surface Condenser.		No similar failures were reported during this reporting period	We monitor the fouling rate of the condenser heat exchanger tubes and plan cleaning efforts to maintain reliable operation.
Riverside 7	Maintenance	Condenser Tube And Water Box Cleaning	7/13/2011 10:30	7/14/2011 16:00	Unit 7 Steam Turbine Surface Condenser Circulation Water Side	Biological and sedimentary fouling of the circulation water side exchanger tubes for the Unit 7 Surface Condenser.		No similar failures were reported during this reporting period	We monitor the fouling rate of the condenser heat exchanger tubes and plan cleaning efforts to maintain reliable operation.
Riverside 9	Maintenance	Condenser Tube And Water Box Cleaning	7/13/2011 10:30	7/14/2011 16:00	Unit 7 Steam Turbine Surface Condenser Circulation Water Side - The Gas Turbine can't run without steam turbine available	Biological and sedimentary fouling of the circulation water side exchanger tubes for the Unit 7 Surface Condenser.		No similar failures were reported during this reporting period	We monitor the fouling rate of the condenser heat exchanger tubes and plan cleaning efforts to maintain reliable operation.
Sherburne 1	Forced	Waterwall (Furnace Wall)	7/8/2011 0:22	7/10/2011 23:45	Boiler waterwall tube leak	Southwest boiler bottom slope, tubes 148 and 149 below A25 sootblower. Leak initiated from an insufficient window weld repair in the same location from a tube leak on 3/10/2011 which was caused by sootblower and ash erosion.		No similar failures were reported during this reporting period	Purchased a phased array "cobra" probe (non-destructive examination) that is small enough to slip in between two boiler tubes (1/2") to monitor the quality and acceptance of weld repairs.
Wheaton 1G	Forced	Emergency Generator Trip Devices	7/1/2011 11:40	7/5/2011 11:18	Rack O Backplane in Turbine PLC	Failed equipment not found until subsequent test ran on 07/05/2011		No similar failures were reported during this reporting period	Part was found to be at end of life cycle and replaced with new part.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Wheaton 1G	Forced	Emergency Generator Trip Devices	7/5/2011 11:21	7/13/2011 8:59	Rack O Backplane in Turbine PLC	Back plane in PLC found to be shorted		No similar failures were reported during this reporting period	Part was found to be at end of life cycle and replaced with new part.
Aug-11									
BD25.CC	Forced	Pilot fuel nozzles/vanes	8/24/2011 7:03	8/25/2011 13:45	Compressor Pilot fuel nozzles	CT had an auto runback followed by a trip. Maintenance replaced two pilot nozzles.		No similar failures were reported during this reporting period	Failed pilot nozzle replaced with rebuilt nozzle. Capital project developed to purchase and install improved pilot nozzle. Improved pilot nozzles installed 6/13/2012.
Black.Dog.3	Forced	Second Reheater Leaks	8/16/2011 8:50	8/23/2011 9:30	Boiler leak	Reheat section tube leak		Similar occurrences on 10/12/11 and 1/3/2012.	Boiler leak repaired. Unit 3 reheat section has extensive damage from service. Due to expected remaining life of unit, replacement of complete superheat section not economically justified.
Black.Dog.4	Derate	Flood	8/1/2011 0:00	8/6/2011 20:00	Flood derate, unit had full capabilities of generation.	Road limitations did not support continued generation of ash and coal usage. This was not an outage and all generation was replaceable with gas.		Minnesota River Flooding occurred July 2011, August 2011 and June 2012 during this reporting period.	Flood procedure strategically allows for operations of the plants with deratement, replaceable with gas, to minimized bottom and fly ash generations and coal usage.
Black.Dog.4	Derate	Flood	8/6/2011 20:01	8/14/2011 5:51	Flood derate, unit had full capabilities of generation.	Road limitations did not support continued generation of ash and coal usage. This was not an outage and all generation was replaceable with gas.		Minnesota River Flooding occurred July 2011, August 2011 and June 2012 during this reporting period.	Flood procedure strategically allows for operations of the plants with deratement, replaceable with gas, to minimized bottom and fly ash generations and coal usage.
Black.Dog.4	Forced	Emergency Generator Trip Devices	8/14/2011 5:51	8/15/2011 18:48	Generator Protective Relay (40T - Field Relay).	Unit tripped due to a faulty 40T field relay that rolled the 86 lockout.		No similar failures were reported during this reporting period	The failed protective relay was replaced by a spare.
Black.Dog.4	Derate	Flood	8/15/2011 18:48	8/27/2011 0:25	Flood derate, unit had full capabilities of generation.	Road limitations did not support continued generation of ash and coal usage. This was not an outage and all generation was replaceable with gas.		Minnesota River Flooding occurred July 2011, August 2011 and June 2012 during this reporting period.	Flood procedure strategically allows for operations of the plants with deratement, replaceable with gas, to minimized bottom and fly ash generations and coal usage.
Blue.Lake.1	Maintenance	Gas Turbine - Hydraulic Oil System	8/8/2011 6:00	8/10/2011 14:23	The UNIT 1 Jacking Oil Pump 1-PMP-0025-LO	Motor to pump coupling failed		No similar failures were reported during this reporting period	We inspected other jacking oil pump couplings and added checks for future Preventive Maintenance on the pumps.
Blue.Lake.7	Forced	Gas Turbine - Starting System (including Motor)	8/24/2011 14:00	8/26/2011 13:15	The Starting System LCI Load Computated Inverter Programmable Logic Controller, common equipment for Units 7 & 8	The programmable logic controller failed		No similar failures were reported during this reporting period	GE identified in a technical information letter (TIL) to periodically check for null voltage on a particular control card. Preventive Maintenance activity created to measure voltages in Programmable Logic Controller for a drift in Direct Current Null Offset.
Blue.Lake.8	Maintenance	Gas Turbine - Gas Fuel System	8/9/2011 12:00	8/11/2011 11:30	The U8 SRV Stop Ratio Valve Main Fuel Valve	Valve leaked though causing a failure of prestart safeties test.		No similar failures were reported during this reporting period	We purchased a capital spare, replaced and rebuilt this valve in May 2012. We monitor periodically for performance degradation.
Blue.Lake.8	Forced	Gas Turbine - Starting System (including Motor)	8/24/2011 14:00	8/26/2011 13:15	The Starting System LCI Load Computated Inverter Programmable Logic Controller, common equipment for Units 7 & 8	The programmable logic controller failed		No similar failures were reported during this reporting period	GE identified in a technical information letter (TIL) to periodically check for null voltage on a particular control card. Preventive Maintenance activity created to measure voltages in Programmable Logic Controller for a drift in Direct Current Null Offset.
French.Is.1	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	8/5/2011 17:52	8/9/2011 0:17	Boiler	Periodic boiler cleaning and inspection		French Island Unit 1 underwent similar maintenance outages on 8/5/11, 10/7/11, 12/2/11, 2/3/12 and 4/6/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
French.Is.2	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	8/19/2011 18:20	8/25/2011 13:06	Boiler	Periodic boiler cleaning and inspection		Four similar failures were reported during this reporting period for French Island Unit 1.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Recurrence
			Start	End					
HighBridge.7	Maintenance	HP Startup bypass system valves	8/5/2011 4:00	8/7/2011 15:00	Unit 8 Main Steam Bypass Valve. This was not a forced outage, but a scheduled maintenance outage to address a degradation in valve performance.	Unit 8 bypass valve was operating poorly due to magnetite in the plug, disc and seat. Pre-emptive outage taken to replace valve internals and improve valve operation. Unit 7 must be out of service to perform repairs to Unit 8 Main Steam Bypass Valve.		There were no similar failures for Unit 8 of this type during the time frame in question. However, Unit 7 had similar problems and experienced a forced outage in July 2011 and a planned maintenance outage in Feb. 2012. The outage on Unit 8 was performed as a result of the experience with Unit 7.	Unit 8 valve plug was damaged by magnetite resulting in the valve sticking at times during operation. We replaced valve internals. In 2012, a different style plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate properly.
HighBridge.8	Maintenance	HP Startup bypass system valves	8/5/2011 0:20	8/7/2011 15:00	Main Steam Bypass Valve. This was not a forced outage, but a scheduled maintenance outage to address a degradation in valve performance.	Bypass valve operating poorly due to magnetite in the plug, disc and seat. Pre-emptive outage taken to replace valve internals and improve valve operation.		There were no similar failures for this Unit of this type during the time frame in question. However, Unit 7 had similar problems and experienced a forced outage in July 2011. The outage on Unit 8 was performed as a result of the experience with Unit 7.	Unit 8 valve plug was damaged by magnetite resulting in the valve sticking at times during operation. We replaced valve internals. In 2012, a different style plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate properly.
HighBridge.9	Maintenance	HP Startup bypass system valves	8/5/2011 4:00	8/7/2011 15:00	Unit 8 Main Steam Bypass Valve. This was not a forced outage, but a scheduled maintenance outage to address a degradation in valve performance.	Unit 8 bypass valve operating poorly due to magnetite in the plug, disc and seat. Pre-emptive outage taken to replace valve internals and improve valve operation. Unit 9 is unavailable when unit 7 and 8 are out of service.		There were no similar failures for this Unit of this type during the time frame in question. However, Unit 7 had similar problems and experienced a forced outage in July 2011. The outage on Unit 8 was performed as a result of the experience with Unit 7.	Unit 8 valve plug was damaged by magnetite resulting in the valve sticking at times during operation. We replaced valve internals. In 2012, a different style plug assembly was installed for this valve which prevents magnetite from causing the valve to stick and fail to operate properly.
Inver.Hills.3G	Forced	4000-6000-volt Circuit Breakers	8/10/2011 20:51	8/12/2011 13:45	Cooling pumps and fans for #2 Generator Step Up Transformer which serves generating units 3 and 4.	Control power transformer failed for the power supply to the transformer cooling fans and pumps.		No similar failures were reported during this reporting period	The control power transformer was replaced with new transformer.
Inver.Hills.4G	Forced	4000-6000-volt Circuit Breakers	8/10/2011 20:51	8/12/2011 13:45	Cooling pumps and fans for #2 Generator Step Up Transformer which serves generating units 3 and 4.	Control power transformer failed for the power supply to the transformer cooling fans and pumps.		No similar failures were reported during this reporting period	The control power transformer was replaced with new transformer.
Key.City.1	Forced	Gas Turbine - Load Shaft And Bearings	8/1/2011 0:00	8/31/2011 23:59	Generator	Ground Alarm		Continuation of the generator ground event prior to 7/1/2011.	The decision was made to moth ball the unit in place until economically justified.
Monticello.1	Derate	Condensate/hotwell Pump Motor	8/6/2011 0:10	8/7/2011 14:30	No. 11 Condensate Pump Motor Thrust Bearing	The No. 11 Condesate Pump Motor Thrust Bearing experienced high vibrations leading to their needing to be replaced prior to failure.		No similar failure was reported during this reporting period.	The No. 11 Condensate Pump Motor Thrust Bearing was replaced.
Monticello.1	Derate	Condensate/hotwell Pump Motor	8/27/2011 0:10	8/29/2011 12:00	No. 11 Condensate Pump Motor Thrust Bearing	Following replacement on August 6, the No. 11 Condesate Pump Motor Thrust Bearing experienced high vibrations leading to their needing to be replaced prior to failure.		The Condensate Pump Motor Thrust Bearing previously failed on August 6, 2011.	The cause of the high vibration was determined to be due to brinnelling of bearing races caused by bearing surface stress during installation. The maintenance procedure for replacing antifriction bearings was modified to address the proper handling/installation of roller/ball bearings to prevent damage during installation.
Red.Wing.2	Forced	Coal Conveyor Scales-storage Coal Pile	8/5/2011 3:00	8/8/2011 10:51	Scalping Conveyor	Drive Chain Broke		No similar failures were reported during this reporting period	We replaced chain. We replaced washers that hold conveyor slats with a new style to better prevent loose bolts. We altered the control program to start the conveyor at a slower speed to reduce strain on components during initial start.
Sherburne.1	Forced	Other Boiler Tube Leaks	8/16/2011 0:17	8/17/2011 21:21	Steam cooled wall boiler tube leak	Location was a bent tube at an observation port next to J2 sootblower. The leak initiated from a crack likely started in the bending process during original manufacturing.		No similar failures were reported during this reporting period	We have mplemented more rigourus QA/QC requirements in our material supply contracts and hold points with inspections during the manufacturing of boiler replacement components.

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Sherburne.3	Derate	Dry Scrubber - Spray Machine/atomizer	8/4/2011 12:30	8/6/2011 0:50	Flue gas scrubbing system, 32 solids recycle tank	32 solids recycle tank was removed from service for cleaning and placed back into service. Upon putting into service, some deposits on the side of the tank shed and caused subsequent pluggage of spray dryer absorber atomizers down stream. The unit was derated in order to comply with our existing SO2 emission air permit.		No similar failures were reported during this reporting period	More stringent standard / inspection criteria was implemented prior to turning the equipment over to operations for use.
Wheaton.6	Forced	Other PLC problems	8/16/2011 7:00	8/31/2011 23:59	PLC Thermal/couple board	Board failure caused by lightning strike		No similar failures were reported during this reporting period	We inspected and made repairs to lightning ground grid on unit.
Sep-11									
BD25.CC	Maintenance	Condenser Tube Sheet Fouling	9/8/11 0:00	9/9/11 10:00	Unit 2 Condenser	Marine fouling of heat transfer surfaces		No similar failures were reported during this reporting period	Late summer marine growth and high river temperatures contribute to this issue every year. Permit-limited use of bromine treatment assists with marine fouling but does not prevent this derate based on environmental conditions.
Blue.Lake.3	Maintenance	Gas Turbine - Fuel Piping And Valves	9/12/11 0:00	9/14/11 12:29	3-HOV-0028-FO 3 Combustion Chamber Fuel Control 3-Way Valve	Valve was identified to be leaking through during annual environmental fuel flow testing		Similar occurrences on 12/12/11 and 12/27/2011.	Removed, cleaned, and inspected sealing surfaces and then reinstalled. Started looking at other sources of potential failure.
HighBridge.7	Maintenance	Other Miscellaneous External Problems	9/21/11 0:00	9/22/11 0:30	Scheduled inspection of the river water intake screenhouse for undermining of the sheetpiling.	Screenhouse Structure - Inspection of the integrity of the sheetpiling and intake underwater structures.		No similar failures were reported during this reporting period	Underwater inspection revealed no degradation of structures or undermining of containment areas. Implemented periodic inspection to monitor conditions.
HighBridge.8	Maintenance	Other Miscellaneous External Problems	9/21/11 0:00	9/22/11 0:30	Scheduled inspection of the river water intake screenhouse for undermining of the sheetpiling.	Screenhouse Structure - Inspection of the integrity of the sheetpiling and intake underwater structures.		No similar failures were reported during this reporting period	Underwater inspection revealed no degradation of structures or undermining of containment areas. Implemented periodic inspection to monitor conditions.
HighBridge.9	Maintenance	Other Miscellaneous External Problems	9/21/11 0:00	9/22/11 0:30	Scheduled inspection of the river water intake screenhouse for undermining of the sheetpiling.	Screenhouse Structure - Inspection of the integrity of the sheetpiling and intake underwater structures.		No similar failures were reported during this reporting period	Underwater inspection revealed no degradation of structures or undermining of containment areas. Implemented periodic inspection to monitor conditions.
Key.City.1	Forced	Gas Turbine - Load Shaft And Bearings	9/1/11 0:00	9/30/11 23:59	Generator	Ground Alarm		Continuation of the generator ground event prior to 7/1/2011.	The decision was made to moth ball the unit in place until economically justified.
Riverside.10	Maintenance	Gas Turbine Cleaning	9/13/11 21:00	9/15/11 18:00	The unit was held out of service for an offline compressor wash on the gas turbines Units 9 & 10.	This is a preventative maintenance activity recommended by the manufacturer to correct compressor fouling performance losses over time and for corrosion pitting type protection.		There were no similar preventive maintenance outages during the time frame in question.	No failure occurred Preventative Maintenance only
Riverside.7	Maintenance	Gas Turbine Cleaning	9/13/11 21:00	9/14/11 21:00	The unit was held out of service for an offline compressor wash on the gas turbines Units 9 & 10.	This is a preventative maintenance activity recommended by the manufacturer to correct compressor fouling performance losses over time and for corrosion pitting type protection.		There were no similar preventive maintenance outages during the time frame in question.	No failure occurred Preventative Maintenance only
Riverside.9	Maintenance	Gas Turbine Cleaning	9/13/11 21:00	9/14/11 21:00	Unit 7 can't run without the gas turbines Units 9 & 10. The unit was held out of service for an offline compressor wash on the gas turbines Units 9 & 10.	This is a preventative maintenance activity recommended by the manufacturer to correct compressor fouling performance losses over time and for corrosion pitting type protection.		There were no similar preventive maintenance outages during the time frame in question.	No failure occurred Preventative Maintenance only
Wheaton.1G	Forced	DC Circuit Breakers	9/16/11 14:00	9/19/11 9:00	Intermittent 125VDC ground later found to be a cracked battery cell	Battery cell with hairline crack would leak under load causing ground to system		No similar failures up to this date	Once defective battery was replaced, weekly inspection of batteries was incorporated.
Wheaton.1G	Forced	DC Circuit Breakers	9/23/11 14:30	9/26/11 12:00	Intermittent 125VDC ground later found to be a cracked battery cell	Battery cell with hairline crack would leak under load causing ground to system		Previous problem on 09/16/2011	Once defective battery was replaced, weekly inspection of batteries was incorporated.
Wheaton.2G	Forced	Other DC Power Problems	9/29/11 11:30	9/30/11 16:00	Intermittent 125VDC ground later found to be a cracked battery cell	Battery cell with hairline crack would leak under load causing ground to system		No problem up to this date, although same cell and problem as previously seen on Unit Wheaton 1G.	Once defective battery was replaced, weekly inspection of batteries was incorporated.

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Wheaton.6	Forced	Other PLC problems	9/1/11 0:00	9/14/11 9:30	PLC thermal/ couple board	Board failure due to lightning strike on 08/16/2011. Board had been replaced with a bad board.		Original occurrence on 08/16/2011	Replaced with new board and incorporated pre-operational testing of replacement boards.
Oct-11									
BD25.CC	Extension	Other Safety Problems	10/4/11 0:00	10/31/11 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Similar issue to the event on 7/23/2011	Exhaust section of turbine replaced with improved single piece exhaust.
Black.Dog.3	Extension	Other Safety Problems	10/4/11 0:00	10/8/11 23:25	Circulating Water repairs	Cleaning of circulating water tunnel and repairs to required sections of piping.		No similar failures were reported during this reporting period	Tunnel cleaning and inspection took longer than expected requiring outage extension. Had issues pumping down tunnel so that it would be safe to enter for inspections. Discharge tunnel was approximately 70% plugged with silt.
Black.Dog.3	Forced	Second Reheater Leaks	10/12/11 20:31	10/13/11 22:00	Boiler leak	Reheat section tube leak		Similar occurrences on 8/16/11 and 1/3/2012.	Boiler leak repaired. Unit 3 reheat section has extensive damage from service. Due to expected remaining life of unit, replacement of complete superheat section not economically justified.
Black.Dog.3	Extension	Debris in Circulating water from outside sources	10/31/11 0:00	10/31/11 23:59	Circulating Water	Clogged debris filter		No similar failures were reported during this reporting period	Fish (shad) kill in the river caused debris filters to plug. Traveling water screens were inspected. PMs have been put in place to maintain the fish removal devices.
Black.Dog.4	Extension	Other Safety Problems	10/4/11 0:00	10/10/11 9:05	Circulating Water	Unit 4 was taken off line at 0817 on 9/24 for the all plant Planned Outage for circulating water tunnel repairs and cleaning. The scheduled return of the units extended to 10/7.		No similar failures were reported during this reporting period	Tunnel cleaning and inspection took longer than expected requiring outage extension. Had issues pumping down tunnel so that it would be safe to enter for inspections. Discharge tunnel was approximately 70% plugged with silt.
Black.Dog.4	Extension	Debris in Circulating water from outside sources	10/31/11 0:00	10/31/11 23:59	Circulating Water	Clogged debris filter		No similar failures were reported during this reporting period	Fish (shad) kill in the river caused debris filters to plug. Traveling water screens were inspected. PMs have been put in place to maintain the fish removal devices.
French.Is.1	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	10/7/11 17:56	10/11/11 22:23	Boiler	Periodic Boiler Cleaning and Inspection		French Island Unit 1 underwent similar maintenance outages on 8/5/11, 10/7/11, 12/2/11, 2/3/12 and 4/6/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
French.Is.1	Maintenance	Stacks	10/27/11 18:00	10/31/11 0:43	Flue Gas Stack	Routine Maintenance		No similar failures were reported during this reporting period	Routine maintenance of refractory to protect steel stack from excess heat.
French.Is.2	Maintenance	Stacks	10/20/11 18:00	10/24/11 5:02	Flue Gas Stack	Routine Maintenance		No similar failures were reported during this reporting period	Routine maintenance of refractory to protect steel stack from excess heat.
French.Is.4	Maintenance	4000-6000-volt Transformers	10/17/11 7:00	10/31/11 17:20	#3 Bank Transformer Preventative Maintenance	Inspection, preventative maintenance, and repairs.		No similar failures were reported during this reporting period	An outside contractor was brought on site to perform preventative maintenance, fan inspection and repairs, oil leak repairs, instrumentation upgrades and to test transformer bushings.
Inver.Hills.1G	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/19/11 5:00	10/21/11 14:45	Unit was held out of service for preventive maintenance activities.	Inspect and repair exhaust diffuser. Other miscellaneous preventive maintenance activities which require the unit to be out of service.		There were no similar preventive maintenance outages during the time frame in question.	No failures. Preventive Maintenance only.
Inver.Hills.2G	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/13/11 5:00	10/14/11 12:00	Unit was held out of service for preventive maintenance activities.	Inspect and repair exhaust diffuser. Other miscellaneous preventive maintenance activities which require the unit to be out of service.		There were no similar preventive maintenance outages during the time frame in question.	No failures. Preventive Maintenance only.
Inver.Hills.3G	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/18/11 5:00	10/20/11 15:00	Unit was held out of service for preventive maintenance activities.	Inspect and repair exhaust diffuser. Other miscellaneous preventive maintenance activities which require the unit to be out of service.		There were no similar preventive maintenance outages during the time frame in question.	No failures. Preventive Maintenance only.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
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Angus.Anson.2G	Maintenance	4000-6000-volt Transformers	11/15/11 6:00	11/16/11 18:00	Unit 2 Transformers	Yearly preventative maintenance		No similar failures were reported during this reporting period	This preventative maintenance takes place every year in the off peak time of the year.
Angus.Anson.2G	Forced	Circuit Breakers	11/16/11 18:00	11/18/11 6:00	Unit 2 circuit breakers	Two Breakers failed to close after transformer work		No similar failures were reported during this reporting period	The breakers have been repaired and tested. They are on a five year test and rebuild schedule.
Angus.Anson.3G	Maintenance	Unit Auxiliaries Transformer	11/15/11 6:00	11/17/11 6:00	Unit 3 Transformers	Yearly preventative maintenance		No similar failures were reported during this reporting period	This preventative maintenance takes place every year in the off peak time of the year.
BD25.CC	Extension	Other Safety Problems	11/1/11 0:00	11/30/11 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust.
Black.Dog.3	Extension	Debris in Circulating water from outside sources	11/1/11 0:00	11/3/11 0:00	Circulating Water	Cleaning of the intake and discharge tunnel and repairs to required sections of piping.		No similar failures were reported during this reporting period	Fish (shad) kill in the river caused debris filters to be plugged. Traveling water screens were inspected. Preventative maintenances have been put in place to maintain the fish removal devices.
Black.Dog.4	Extension	Debris in Circulating water from outside sources	11/1/11 0:00	11/2/11 21:13	Circulating Water	Cleaning of the intake and discharge tunnel and repairs to required sections of piping.		No similar failures were reported during this reporting period	Fish (shad) kill in the river caused debris filters to be plugged. Traveling water screens were inspected. Preventative maintenances have been put in place to maintain the fish removal devices.
Blue.Lake.1	Maintenance	Gas Turbine - Fuel Piping And Valves	11/10/11 0:00	11/11/11 11:00	Fuel Flow Orifice Inspection - Preventative maintenance	Preventative Maintenance for Combustion Turbine		Preventative Maintenance Activity	No failures. Preventive Maintenance only.
French.Is.2	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	11/11/11 18:00	11/17/11 22:28	Boiler	Periodic Boiler Cleaning and Inspection		French Island Unit 2 underwent similar maintenance outages on 11/17/11, 1/17/12, 2/22/12, and 5/22/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
Key.City.1	Forced	Gas Turbine - Load Shaft And Bearings	11/1/11 0:00	11/30/11 23:59	Generator	Ground Alarm		Continuation of the generator ground event prior to 7/1/2011.	The decision was made to moth ball the unit in place until economically justified.
Monticello.1	Forced	Turbine Trip Devices (including Instruments)	11/19/11 23:13	11/28/11 16:44	Turbine lube oil tank vacuum indicator.	The turbine lube oil tank vacuum indicator calibration band and accuracy did not allow operators to make an accurate assessment of the condition. This resulted in oil build up on the turbine shaft resulting in fouled grounding braids. The shaft grounding device is intended to prevent damage to turbine generator components caused by circulating currents. Resulting circulating currents degraded the speed governor drive gear which resulted in governor oscillations that manifested itself during speed load changer testing and caused pressure oscillations at the acceleration relay pressure switches.		No similar failures were reported during this reporting period.	Corrective actions included replacing the Turbine Lube Oil Tank Vacuum Indicator with a higher accuracy device and updating the operator round sheet to reflect new control bands. Repairs were also made to the speed governor gear drive components and main shaft oil pump components which were damaged by electrolysis and a modifications was performed to install a more robust grounding apparatus.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Monticello.1	Forced	Turbine Trip Devices (including Instruments)	11/28/11 16:44	11/30/11 23:59	Turbine lube oil tank vacuum indicator.	The turbine lube oil tank vacuum indicator calibration band and accuracy did not allow operators to make an accurate assessment of the condition. This resulted in oil build up on the turbine shaft resulting in fouled grounding braids. The shaft grounding device is intended to prevent damage to turbine generator components caused by circulating currents. Resulting circulating currents degraded the speed governor drive gear which resulted in governor oscillations that manifested itself during speed load changer testing and caused pressure oscillations at the acceleration relay pressure switches.		Continuation of 11/19 outage	Corrective actions included replacing the Turbine Lube Oil Tank Vacuum Indicator with a higher accuracy device and updating the operator round sheet to reflect new control bands. Repairs were also made to the speed governor gear drive components and main shaft oil pump components which were damaged by electrolysis and a modifications was performed to install a more robust grounding apparatus.
Red.Wing.1	Forced	Lack Of Fuel (outside management control)	11/19/11 17:00	11/24/11 0:10	Not equipment related	Insufficient fuel available from supplier to keep both units online.		No similar failures were reported during this reporting period	Since this time, we have negotiated a fuel contract with the city of Red Wing in addition to Newport to increase the amount of fuel available to the facility.
Riverside.10	Maintenance	Gen. Stator Windings, Bushings, And Terminals	11/1/11 0:00	11/5/11 23:00	The unit was held out of service for a boroscope inspection of the combustion turbine/compressor and a warranty repair for the generator.	This is a preventative maintenance activity recommended by the manufacturer to inspect the compressor and combustion turbine on a periodic basis. GE Generator Dry Wrap Modification to improve reliability. The Riverside Generators when constructed with a winding wrap that had caused Phase to Phase grounds on other generators in the GE fleet.		There were no similar preventive maintenance outages during the time frame in question.	No failures. Preventive Maintenance only.
Sherburne.2	Derate	High Pressure Heater Tube Leaks	11/3/11 14:30	11/11/11 16:50	27 High Pressure Feedwater Heater tube leak	This high pressure feedwater heater is at its end of life. Cumulative wear (36 years of service) of high pressure feedwater heater tubes from extraction steam erosion caused the leaks.		One similar failure was reported for Sherburne 2 on 5/14/12.	27 High Pressure Feedwater Heater will be replaced during the next major overhaul scheduled for the fall of 2013.
Sherburne.3	Extension	Major Boiler Overhaul (720 Hours Or Longer)	11/6/11 20:00	11/18/11 14:38	31 primary first stage superheat attemperator	During outage inspections, this steam temperature control attemperator nozzle was found cracked and needed replacement. This extension was the time it took to order replacement parts, install the nozzle and perform post weld heat treatment according to our weld repair program.		No similar failures were reported during this reporting period	We incorporated this inspection into subsequent outages early on so that an outage extension can be avoided.
Sherburne.3	Extension	Turbine Failure	11/19/11 12:39	11/30/11 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		No similar failures were reported during this reporting period prior to this outage.	Re-design of the L-1 disk to blade attachment.
Wheaton.1G	Maintenance	Fire protection system instrumentation and control	11/18/11 18:00	11/30/11 23:59	Fall Preventative Maintenance	No equipment failure, scheduled preventative maintenance work		No similar failures were reported during this reporting period	Annual inspections are completed to prevent failures of the turbine and generator, lube/inspection motors, valves, etc.
Wheaton.2G	Forced	Programmable Logic Controller (PLC)	11/1/11 0:00	11/17/11 10:06	24 volt power supply	24 volt power supply did not transfer load to redundant power supply		No similar failures were reported during this reporting period	Power supply replaced, and the redundant wiring scheme was corrected and re-wired.
Wheaton.3G	Forced	Other Generator Controls And Metering Problems	11/1/11 0:00	11/29/11 15:38	Megawatt power trac device in generator control cabinet	Power trac device failed due to end of life cycle		Continuation of the issue starting on 10/11/2011	New power trac installed
Dec-11									
Allen.S.King.1	Forced	High Pressure Heater Tube Leaks	12/9/11 22:00	12/12/11 5:19	16 B High Pressure Feedwater Heater tube leak	16 B heater developed a leak in 4 tubes causing the plant to come offline for repair.		No similar failures were reported during this reporting period	In the Spring of 2013 King Plant replaced this heater with a new feedwater heater.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
BD25.CC	Extension	Other Safety Problems	12/1/11 0:00	12/31/11 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust.
Black.Dog.4	Forced	Second Superheater Leaks	12/5/11 0:51	12/9/11 5:07	Boiler leak	Superheat section tube leak		No similar failures were reported during this reporting period	Boiler leak repaired. Unit 4 secondary superheat section had extensive damage from long term overheat. Due to expected remaining life of unit, replacement of complete superheat section is not economically justified.
Blue.Lake.1	Maintenance	Gas Turbine Liquid Fuel Oil Transfer/forward Pump	12/8/11 14:10	12/12/11 12:00	0-HCP-002A-FO Fuel Oil Heater for Units 1& 2	The temperature indication was not shielded properly due to insulation degradation over time this was causing false indication control difficulties		No similar failures were reported during this reporting period	Replaced RTD wiring with a new shielded style to prevent false readings.
Blue.Lake.2	Maintenance	Gas Turbine Liquid Fuel Oil Transfer/forward Pump	12/8/11 14:10	12/12/11 12:00	0-HCP-002A-FO Fuel Oil Heater for Units 1& 2	The temperature indication was not shielded properly due to insulation degradation over time this was causing false indication control difficulties		No similar failures were reported during this reporting period	Replaced RTD wiring with a new shielded style to prevent false readings.
Blue.Lake.2	Maintenance	Gas Turbine - Fuel Piping And Valves	12/27/11 6:00	12/31/11 23:59	The unit was held out of service to support fuel leak off testing preventative maintenance on Unit 3	Fuel Oil Supply System was required to be out of service		No similar failures were reported during this reporting period	No failures. Preventive Maintenance only.
Blue.Lake.3	Maintenance	Gas Turbine - Fuel Piping And Valves	12/12/11 0:00	12/14/11 18:30	3-HOV-0028-FO 3 Combustion Chamber Fuel Control 3-Way Valve	Valve was identified to be leaking through during annual environmental fuel flow testing		Similar occurrences on 9/12/11 and 12/27/2011.	Remachined valve and reinstalled.
Blue.Lake.3	Maintenance	Gas Turbine - Fuel Piping And Valves	12/27/11 6:00	12/28/11 11:54	3-HOV-0028-FO 3 Combustion Chamber Fuel Control 3-Way Valve	Valve was identified to be leaking through during annual environmental fuel flow testing		Similar occurrences on 9/12/11 and 12/12/2011.	Installed Unit 2 3-way valve to verify it as the leak source.
Blue.Lake.4	Maintenance	Other Controls And Instrumentation Problems	12/14/11 11:00	12/19/11 11:55	DCS Distributed Control System	Preventative Maintenance - Environmental Fuel Leak Off Testing Preparation. DCS control system anomalies observed requiring outage for troubleshooting		No similar failures were reported during this reporting period	No failures. Preventive Maintenance only.
French.Is.1	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	12/2/11 18:10	12/6/11 19:21	Boiler	Periodic Boiler Cleaning and Inspection		French Island Unit 1 underwent similar maintenance outages on 8/5/11, 10/7/11, 12/2/11, 2/3/12 and 4/6/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
Inver.Hills.1G	Maintenance	Protection Devices	12/5/11 5:00	12/6/11 18:00	Unit was held out of service for a modification to unit protection system.	Breaker Failure and Inadvertent Energization Relay re-programming to interface with new M-3425 relay.		No similar failures were reported during this reporting period	No failures. Protection System planned modifications.
Inver.Hills.2G	Maintenance	Protection Devices	12/5/11 5:00	12/6/11 18:00	Unit was held out of service for a modification to unit protection system.	Breaker Failure and Inadvertent Energization Relay re-programming to interface with new M-3425 relay.		No similar failures were reported during this reporting period	No failures. Protection System planned modifications.
Inver.Hills.3G	Maintenance	Protection Devices	12/7/11 5:00	12/9/11 12:41	Unit was held out of service for a modification to unit protection system.	Breaker Failure and Inadvertent Energization Relay re-programming to interface with new M-3425 relay.		No similar failures were reported during this reporting period	No failures. Protection System planned modifications.
Inver.Hills.4G	Maintenance	Protection Devices	12/7/11 5:00	12/9/11 10:20	Unit was held out of service for a modification to unit protection system.	Breaker Failure and Inadvertent Energization Relay re-programming to interface with new M-3425 relay.		No similar failures were reported during this reporting period	No failures. Protection System planned modifications.
Inver.Hills.4G	Forced	Inverters	12/9/11 13:31	12/12/11 10:08	Controls - Power Trak	Power Trak control board failed.		No similar failures were reported during this reporting period	Replaced failed Power Trak with new.
Inver.Hills.5G	Maintenance	Protection Devices	12/12/11 5:00	12/13/11 11:33	Unit was held out of service for a modification to unit protection system.	Breaker Failure and Inadvertent Energization Relay re-programming to interface with new M-3425 relay.		No similar failures were reported during this reporting period	No failures. Protection System planned modifications.
Inver.Hills.6G	Maintenance	Protection Devices	12/12/11 5:00	12/13/11 11:39	Unit was held out of service for a modification to unit protection system.	Breaker Failure and Inadvertent Energization Relay re-programming to interface with new M-3425 relay.		No similar failures were reported during this reporting period	No failures. Protection System planned modifications.
Key.City.1	Forced	Generator Rotor Windings	12/1/11 0:00	12/31/11 23:59	Generator	Ground Alarm		Continuation of the generator ground event prior to 7/1/2011.	The decision was made to moth ball the unit in place until economically justified.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Monticello.1	Forced	Turbine Trip Devices (including Instruments)	12/1/11 0:00	12/10/11 2:55	Turbine lube oil tank vacuum indicator.	The turbine lube oil tank vacuum indicator calibration band and accuracy did not allow operators to make an accurate assessment of the condition. This resulted in oil build up on the turbine shaft resulting in fouled grounding braids. The shaft grounding device is intended to prevent damage to turbine generator components caused by circulating currents. Resulting circulating currents degraded the speed governor drive gear which resulted in governor oscillations that manifested itself during speed load changer testing and caused pressure oscillations at the acceleration relay pressure switches.		Continuation of 11/19 outage	Corrective actions included replacing the Turbine Lube Oil Tank Vacuum Indicator with a higher accuracy device and updating the operator round sheet to reflect new control bands. Repairs were also made to the speed governor gear drive components and main shaft oil pump components which were damaged by electrolysis and a modifications was performed to install a more robust grounding apparatus.
Riverside.7	Extension	Gen. Stator Windings, Bushings, And Terminals	12/6/11 13:00	12/8/11 7:08	The unit was held out of service for a Unit 9 & Unit 10 boroscope inspection of the combustion turbine/compressor and a warranty repair for the generators. Unit 7 can't run without Unit 9 or Unit 10.	This is a preventative maintenance activity recommended by the manufacturer to inspect the compressor and combustion turbine on a periodic basis. GE Generator Dry Wrap Modification to improve reliability. The Riverside Generators when constructed with a winding wrap that had caused Phase to Phase grounds on other generators in the GE fleet.		There were no similar preventive maintenance outages during the time frame in question.	No failures. Preventive Maintenance only.
Riverside.9	Extension	Gen. Stator Windings, Bushings, And Terminals	12/6/11 13:00	12/8/11 3:36	The unit was held out of service for a boroscope inspection of the combustion turbine/compressor and a warranty repair for the generator.	This is a preventative maintenance activity recommended by the manufacturer to inspect the compressor and combustion turbine on a periodic basis. GE Generator Dry Wrap Modification to improve reliability. The Riverside Generators when constructed with a winding wrap that had caused Phase to Phase grounds on other generators in the GE fleet.		There were no similar preventive maintenance outages during the time frame in question.	No failures. Preventive Maintenance only.
Sherburne.3	Extension	Turbine Failure	12/1/11 0:00	12/31/11 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		Continued from 11/19/11 outage.	Re-design of the L-1 disk to blade attachment.
Wheaton.1G	Forced	Fire protection system instrumentation and control	12/2/11 18:00	12/15/11 13:00	Electrical wiring to fire detector head in turbine	Wiring upgrade from 11/18/2011 had one incorrectly rated wire installed		No similar failures were reported during this reporting period	Installed high temp wire to device and checked other wires
Wheaton.4G	Maintenance	Fire protection system instrumentation and control	12/5/11 7:00	12/21/11 16:00	Upgrade Fire System	There was no equipment failure. This was preventative maintenance to improve fire system.		One previous problem with end of line resistor	Added redundant heat heads to all existing locations. Moved end of line resistors to remote location outside of turbine compartment. Added four additional horns/strobes and all associated wiring.
Wheaton.4G	Forced	Circuit Breakers	12/21/11 16:00	12/27/11 13:39	Turbine fuel igniters failed to operate, circuit tripped	Old wiring not removed from upgrade project, shorted circuit to igniters		No similar failures were reported during this reporting period	Removed old wiring, confirmed new wiring and tested OK.
Jan-12									
BD25.CC	Extension	Other Safety Problems	1/1/12 0:01	1/31/12 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Black.Dog.3	Forced	First Reheater Leaks	1/3/12 0:30	1/10/12 0:38	Boiler leak	Reheat section tube leak		Similar occurrences on 8/16/11 and 10/12/2011.	Boiler leak repaired. U3 reheat section has extensive damage from service. Due to expected remaining life of unit, replacement of complete superheat section not economically justified.
Blue.Lake.2	Maintenance	Gas Turbine - Fuel Piping And Valves	1/1/12 0:00	1/10/12 11:50	The unit was held out of service to support fuel leak off testing preventative maintenance on Unit 3	Fuel Oil Supply System was required to be out of service		No similar failures were reported during this reporting period	No failures. Preventive Maintenance only.
Blue.Lake.3	Maintenance	Gas Turbine - Fuel Piping And Valves	1/9/12 13:30	1/13/12 8:28	3-HOV-0028-FO 3 Combustion Chamber Fuel Control 3-Way Valve	Environmental Fuel Leak Off Testing Preventative Maintenance		Preventative Maintenance Activity	Environmental Leak Test Comple - Passed. We sent the old valve out to be remachined again then tested prior to reinstallation.
French.Is.2	Maintenance	Bed Agglomeration (fbc Only)	1/6/12 17:32	1/9/12 22:58	Boiler	Cleaned inbed media and inspected boiler. Routine to prevent tube failures.		No similar failures were reported during this reporting period	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
French.Is.2	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	1/13/12 18:15	1/17/12 0:20	Boiler	Periodic Cleaning and Inspection		French Island Unit 2 underwent similar maintenance outages on 11/17/11, 1/17/12, 2/22/12. and 5/22/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
French.Is.4	Maintenance	Generator Voltage Control	1/3/12 7:00	1/13/12 12:00	Generator	Voltage Control		No similar failures were reported during this reporting period	This was a shutdown for a capital project to install a new voltage regulator. This was done because the existing voltage regulator was obsolete and was having issues that would require extended outages to locate parts.
French.Is.4	Extension	Generator Voltage Control	1/13/12 12:00	1/17/12 12:39	Generator	Voltage Control		Extension of 1/3/12 outage.	Extension of voltage control outage to make adjustment on newly installed voltage control device. This was a one time issue with the new voltage regulator and we do not expect anymore issues.
Key.City.1	Forced	Generator Rotor Windings	1/1/12 0:00	1/31/12 23:59	Generator	Ground Alarm		Continuation of the generator ground event prior to 7/1/2011.	The decision was made to moth ball the unit in place until economically justified.
Red.Wing.2	Forced	Induced Draft Fan Motors Variable Speed	1/1/12 2:20	1/4/12 8:37	Induced Draft Fan motor	Fan tripped due to a lightning strike		No similar failures were reported during this reporting period	We are planning a project to replace the variable frequency drive control signal to better protect against consequences of lightning strikes and other occurrences which affect line voltage.
Riverside.7	Derate	Gas Turbine - Gas Fuel System	1/9/12 0:01	1/10/12 12:50	Unit 9 Fuel gas Performnce Heater 09-FG-HT-0002 The unit 9 outage resulted in lost steam supply causing the Unit 7 derate.	Unit 9 Fuel Gas Performance Heater Heat Exchanger Head Gasket started to leak. This is a high pressure boiler feed water at ~350 degrees. It needed to be repaired for safety and potential incremental equipment damage.		There were no similar outage during the time frame in question.	Thermal Cycle Fatigue Cleaned surface and replaced gasket.
Riverside.9	Maintenance	Gas Turbine - Gas Fuel System	1/9/12 0:01	1/10/12 12:50	Unit 9 Fuel gas Performnce Heater 09-FG-HT-0002	Unit 9 Fuel Gas Performance Heater Heat Exchanger Head Gasket started to leak. This is a high pressure boiler feed water at ~350 degrees. It needed to be repaired for safety and potential incremental equipment damage.		There were no similar outage during the time frame in question.	Thermal Cycle Fatigue Cleaned surface and replaced gasket.
Sherburne.3	Extension	Turbine Failure	1/1/12 0:01	1/31/12 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		Continued from 11/19/11 outage.	Re-design of the L-1 disk to blade attachment.
Wheaton.2G	Maintenance	Fire protection system instrumentation and control	1/9/12 7:00	1/17/12 8:52	Upgrade Fire System	No equipment failure, improving fire system		One previous problem with end of line resistor. Similar maintenance on Wheaton Unit 3 on 1/3/12.	Added redundant heat heads to all existing locations. Moved end of line resistors to remote location outside of turbine compartment. Added four additional horns/strobes and all associated wiring.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Recurrence
			Start	End					
Wheaton.3G	Maintenance	Fire protection system instrumentation and control	1/3/12 7:00	1/6/12 9:45	Upgrade Fire System	No equipment failure, improving fire system		One previous problem with end of line resistor. Similar maintenance on Wheaton Unit 2 on 1/9/12.	Added redundant heat heads to all existing locations. Moved end of line resistors to remote location outside of turbine compartment. Added four additional horns/strobes and all associated wiring.
Wheaton.6	Maintenance	Fire protection system instrumentation and control	1/23/12 7:00	1/31/12 23:59	Upgrade Fire System	No equipment failure, improving fire system		One previous problem with end of line resistor	Checked wiring, added horns and strobes, reprogrammed system.
Feb-12									
BD25.CC	Extension	Other Safety Problems	2/1/12 0:00	2/29/12 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust.
Black.Dog.4	Forced	Second Superheater Leaks	2/1/12 0:00	2/3/12 23:56	Boiler leak	Primary Superheat section tube leak		No similar failures were reported during this reporting period.	Boiler leak repaired. U4 primary superheat section has extensive damage from long term overheat. Due to expected remaining life of unit, replacement of complete superheat section not economically justified.
Black.Dog.4	Forced	Turbine Main Stop Valves	2/4/12 12:50	2/24/12 4:39	Unit 4 Stop Valve	Stop valve pressure seal steam leak		No similar failures were reported during this reporting period	Stop valve repaired by remachining sealing surface and new pressure seal installed. Stop valve bonnet was hot torqued to insure bolt torque remained correct when valve was hot.
Blue.Lake.4	Maintenance	Gas Turbine - Lube Oil Pumps	2/27/12 14:15	2/29/12 23:59	The Aux Lube Oil Pump Motor, Jack Oil Pump Motor, Lube Oil Motor	Preventative Maintenance for Combustion Turbine Lubrication Pumps and Motors		Preventative Maintenance Activity	No failures. Preventive Maintenance only.
French.Is.1	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	2/3/12 18:15	2/8/12 0:30	Boiler	Periodic Boiler Cleaning and Inspection		French Island Unit 1 underwent similar maintenance outages on 8/5/11, 10/7/11, 12/2/11, 2/3/12 and 4/6/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
French.Is.2	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	2/17/12 17:50	2/22/12 0:43	Boiler	Periodic Boiler Cleaning and Inspection		French Island Unit 2 underwent similar maintenance outages on 11/17/11, 1/17/12, 2/22/12. and 5/22/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
HighBridge.7	Forced	Other HP Steam valves (including vent and drain...	2/2/12 2:40	2/6/12 21:30	Main Steam Bypass Valve	Bypass valve stuck partially open during operation which resulted in overheating of the bypass piping to the condenser.		A similar failure occurred in July 2011. Also, Unit 8 had similar problems and experienced a scheduled maintenance outage in August 2011.	Valve plug was damaged by magnetite resulting in the valve sticking partially open. Since the problems experienced in July and Aug 2011 on both Units 7 and 8, newly designed valve internals were purchased and installed which prevents magnetite from causing the valve to stick and fail to operate properly.
HighBridge.8	Forced	HP Superheater	2/2/12 7:30	2/9/12 23:00	Superheater Tube Header	Superheater tube broke away from the header due to quenching from water leak of a desuperheater control valve.		No similar failures were reported during this reporting period	Tube break was repaired. Desuperheater control valve was inspected and returned to service. No further issues have occurred.
HighBridge.9	Forced	HP Superheater	2/2/12 7:30	2/6/12 23:00	Unit 8 Superheater Tube Header	Unit 8 Superheater tube broke away from the header due to quenching from water leak of a desuperheater control valve. Unit 9 is unavailable while Units 7 and 8 are out of service.		No similar failures were reported during this reporting period	Tube break was repaired. Desuperheater control valve was inspected and returned to service. No further issues have occurred.
HighBridge.9	Derate	HP Superheater	2/6/12 23:00	2/9/12 23:00	Unit 8 Superheater Tube Header	Unit 8 Superheater tube broke away from the header due to quenching from water leak of a desuperheater control valve. Unit 9 is derated while 8 is out of service.		No similar failures were reported during this reporting period	Tube break was repaired. Desuperheater control valve was inspected and returned to service. No further issues have occurred.
Key.City.1	Forced	Generator Rotor Windings	2/1/12 0:00	2/29/12 23:59	Generator	Ground Alarm		Continuation of the generator ground event prior to 7/1/2011.	The decision was made to moth ball the unit in place until economically justified.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Sherburne.3	Extension	Turbine Failure	2/1/12 0:00	2/29/12 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		Continued from 11/19/11 outage.	Re-design of the L-1 disk to blade attachment.
Wheaton.2G	Forced	Other PLC problems	2/8/12 9:01	2/9/12 13:30	Speed Transducers	Speed Sensing Transducers out of calibration		No similar failures were reported during this reporting period	Calibrated Transducers and added frequency/ hertz matching relay to speed
Wheaton.5	Maintenance	Fire protection system instrumentation and control	2/6/12 11:00	2/17/12 16:00	Upgrade Fire System	No equipment failure, improving fire system		One previous problem with end of line resistor	Checked wiring, added horns and strobes, and reprogrammed system.
Wheaton.6	Maintenance	Fire protection system instrumentation and control	2/1/12 0:00	2/3/12 17:00	Upgrade Fire System	No equipment failure, improving fire system		One previous problem with end of line resistor	Checked wiring, added horns and strobes, and reprogrammed system.
Wheaton.6	Maintenance	Service Air Compressors	2/9/12 9:00	2/10/12 15:00	Pressure switches controlling air pressure to unit control air	Pressure switch air line piped incorrectly causing a loss of pressure		No similar failures were reported during this reporting period	Engineering support redew piping scheme, then we re-piped air to operate correctly.
Mar-12									
Allen.S.King.1	Forced	First Reheater Leaks	3/30/12 22:34	3/31/12 23:59	Tube leak in the Reheat section of the boiler cause a derate.	A tube in the Reheat section split open causing a steam leak contained inside the boiler.		One similar failure occurred 4/01/12.	In the Spring of 2013 the Reheat section of the boiler was replaced. Prior to the replacement, King Plant performed NDE (tube thickness testing) and from that data we pad weld thinning tubes and install new tube shields.
BD25.CC	Extension	Other Safety Problems	3/1/12 0:00	3/31/12 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust.
Black.Dog.3	Forced	DCS - data highway	3/12/12 13:52	3/17/12 11:06	Unit 3/4 DCS (Ovation System) Network Equipment (Data Concentrator)	Inconsistent indications related to problems with the Ovation System (data concentrator failure).		No similar failures were reported during this reporting period	Both Data Concentrators on the Unit 3/4 Ovation System were replaced and a third added for redundancy and to better distribute network traffic.
Black.Dog.3	Forced	Other Boiler Instrumentation and Control Problems	3/17/12 12:27	3/18/12 16:44	Unit 3/4 DCS (Ovation System) Configuration	As part of an event associated with a previous problem (Ovation network failure on 3/12/12) numerous Operator settings returned to their initial default values.		Continuation of the issue starting on 3/12/2012	Operations went through Unit 3 and reset all User Selectable parameters to normal.
Black.Dog.4	Maintenance	Circulating Water Pumps	3/10/12 0:24	3/11/12 14:10	Circulating Water Pumps	Outage required to install a blank on the 41 Circulating Water Pump to allow continued operation of the unit while repairs are being made to the pump column.		No similar failures were reported during this reporting period	Blank was installed so pump could be removed from service and sent out for rebuild. Pump was placed back in service and blank was removed.
Black.Dog.4	Forced	DCS - data highway	3/12/12 11:09	3/20/12 1:18	Unit 3/4 DCS (Ovation System) Network Equipment (Data Concentrator)	Unit 4 was shutdown due to loss of the Ovation network (data concentrator failure) which caused a complete loss of Unit 4 Control Room indications on 3/12/12 . Unit 4 was restored on 3/20/12.		No similar failures were reported during this reporting period	Both Data Concentrators on the Unit 3/4 Ovation System were replaced and a third added to better distribute network traffic and provide redundancy.
Blue.Lake.4	Maintenance	Gas Turbine - Lube Oil Pumps	3/1/12 0:00	3/21/12 13:39	The Aux Lube Oil Pump Motor, Jack Oil Pump Motor, Lube Oil Motor	Preventative Maintenance for Combustion Turbine Lubrication Pumps and Motors		Preventative Maintenance Activity	No failures. Preventive Maintenance only.
Blue.Lake.7	Maintenance	Gas Turbine - Gas Fuel System	3/1/12 0:00	3/9/12 23:00	U7 Moog Pilot Valve PM's for IGV's, SRV, and Gas Pre-mix Valves	Preventative Maintenance for Combustion Turbine Hydraulically actuated Valves		Preventative Maintenance Activity	No failures. Preventive Maintenance only.
Blue.Lake.7	Extension	Gas Turbine - Gas Fuel System	3/9/12 23:00	3/19/12 8:08	U7 Moog Pilot Valve PM's for IGV's, SRV, and Gas Pre-mix Valves	Preventative Maintenance for Combustion Turbine Hydraulically actuated Valves		Preventative Maintenance Activity	No failures. Preventive Maintenance only.
French.Is.2	Maintenance	Refractory (fbc Only)	3/2/12 17:54	3/9/12 0:48	Boiler	Refractory North Wall		One similar failure was reported during this reporting period in June	Refractory protects the boiler steel from heat. We perform periodic maintenance on this component.
Inver.Hills.4G	Forced	Circuit Breakers	3/20/12 9:21	3/27/12 14:30	Generator Breaker	Bearing failed and Trip Coil overheated in Generator Breaker.		No similar failures were reported during this reporting period	Replaced Generator Breaker with complete replacement breaker. Failed Generator Breaker to be repaired and available as a spare.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Riverside.10	Derate	Circulating Water Pump Motors	3/14/12 11:43	3/28/12 14:00	Unit 6 Circulation Water Pump Motor	The Unit 6 Circulation Water Pump Motor power terminations faulted phase to phase resulting in a protective relay operation on the Unit 9 Station Auxillary Transformer.		There were no similar outage during the time frame in question.	Unit 9 Station Auxiliary Transformer Relay Timing was incorrectly set to operate before the Unit 6 Circulation Water Pump Motor protection Relay. The relay timing was corrected and the Unit 6 Circulation Water Pump Motor and its terminations were repaired.
Riverside.7	Derate	Circulating Water Pump Motors	3/14/12 11:43	3/28/12 14:00	Unit 6 Circulation Water Pump Motor	The Unit 6 Circulation Water Pump Motor power terminations faulted phase to phase resulting in a protective relay operation on the Unit 9 Station Auxillary Transformer.		There were no similar outage during the time frame in question.	Unit 9 Station Auxiliary Transformer Relay Timing was incorrectly set to operate before the Unit 6 Circulation Water Pump Motor protection Relay. The relay timing was corrected and the Unit 6 Circulation Water Pump Motor and its terminations were repaired.
Riverside.9	Forced	Unit Auxiliaries Transformer	3/12/12 9:12	3/14/12 11:43	Unit 6 Circulation Water Pump Motor	The Unit 6 Circulation Water Pump Motor power terminations faulted phase to phase resulting in a protective relay operation on the Unit 9 Station Auxillary Transformer.		There were no similar outage during the time frame in question.	Unit 9 Station Auxiliary Transformer Relay Timing was incorrectly set to operate before the Unit 6 Circulation Water Pump Motor protection Relay. The relay timing was corrected and the Unit 6 Circulation Water Pump Motor and its terminations were repaired.
Riverside.9	Derate	Circulating Water Pump Motors	3/14/12 11:43	3/28/12 14:00	Unit 6 Cirrculation Water Pump Motor	The Unit 6 Circulation Water Pump Motor power terminations faulted phase to phase resulting in a protective relay operation on the Unit 9 Station Auxillary Transformer.		There were no similar outage during the time frame in question.	Unit 9 Station Auxillary Transformer Relay Timing was incorrectly set to operate before the Unit 6 Circulation Water Pump Motor protection Relay. The relay timing was corrected and the Unit 6 Cirrculation Water Pump Motor and it's terminations were repaired.
Sherburne.3	Extension	Turbine Failure	3/1/12 0:00	3/31/12 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		Continued from 11/19/11 outage.	Re-design of the L-1 disk to blade attachment.
Apr-12									
Allen.S.King.1	Forced	First Reheater Leaks	4/1/12 0:00	4/2/12 9:12	Tube leak in the Reheat section of the boiler caused the unit to shut down.	A tube in the Reheat section split open causing a steam leak contained inside the boiler.		Continuation of the event on 3/30/12.	In the Spring of 2013 the Reheat section of the boiler was replaced. Prior to the replacement, King Plant performed NDE (tube thickness testing) and from that data we pad weld thinning tubes and install new tube shields.
Angus.Anson.4	Maintenance	Gas Turbine - Boroscope Inspection	4/2/12 6:00	4/5/12 18:00	Yearly inspection of inside of CT combustor and compressor section	Yearly Preventative Maintenance		No similar failures were reported during this reporting period	This preventative maintenance takes place every year in the off peak time of the year.
BD25.CC	Extension	Other Safety Problems	4/1/12 0:00	4/30/12 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust.
Black.Dog.3	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	4/21/12 17:00	4/26/12 10:00	Boiler leak	Superheat section tube leak		No similar failures were reported during this reporting period	Boiler leak repaired. U3 secondary superheat section has extensive damage from explosion cleaning. Due to expected remaining life of unit replacement of complete superheat section not economically justified.
Black.Dog.4	Forced	Cold reheat steam piping up to boiler	4/9/12 16:40	4/10/12 21:52	Boiler reheat piping	Steam leak from a 1" cold reheat drip pot drain line weld crack, which was unisolable from reheat boiler section.		No similar failures were reported during this reporting period	Drain line failed due to flow accelerated corrosion, similar piping sections will be inspected at future planned outages.
Blue.Lake.7	Maintenance	Gas Turbine - Boroscope Inspection	4/22/12 0:00	4/28/12 15:00	This is a planned Annual Gas Turbine Inspection of the Combustion Components and Compressor	Preventative Maintenance for Combustion Turbine		Preventative Maintenance Activity	No failures. Preventive Maintenance only.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Blue.Lake.8	Maintenance	Gas Turbine - Boroscope Inspection	4/22/12 0:00	4/28/12 15:00	This is a planned Annual Gas Turbine Inspection of the Combustion Components and Compressor	Preventative Maintenance for Combustion Turbine		Preventative Maintenance Activity	No failures. Preventive Maintenance only.
French.Is.1	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	4/6/12 18:00	4/10/12 1:15	Boiler	Periodic Boiler Cleaning and Inspection		French Island Unit 1 underwent similar maintenance outages on 8/5/11, 10/7/11, 12/2/11, 2/3/12 and 4/6/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
French.Is.1	Forced	Turbine - Miscellaneous Turbine Piping	4/20/12 6:50	4/23/12 11:30	Steam Extraction Piping	Hole in elbow caused by erosion		No similar failures were reported during this reporting period	The problem was localized so we repaired the hole and inspected other areas. Based on our inspections, we do not anticipate any more issues with this piping.
French.Is.2	Maintenance	Circulating Water Pumps	4/27/12 6:08	4/30/12 23:59	Circulating Water Pumps	Routine Maintenance		No similar failures were reported during this reporting period although this event continued into May	This pump was inspected at the original equipment manufacturer's factory to assure extended service. Minor repairs were completed at the time to assure extended service.
Inver.Hills.1G	Forced	Gas Turbine - Ignition System	4/3/12 9:03	4/5/12 11:40	Pac Sci control module	20 BX relay		No similar failures were reported during this reporting period	Replaced defective relay. This is a 1 time event, so no further actions were taken to alleviate reoccurrence
Inver.Hills.3G	Forced	Other Controls And Instrumentation Problems	4/3/12 9:03	4/4/12 11:00	Speed Probe	Speed probe indicating speed while unit is not operating.		There were no similar failures of this type during the time frame in question. However, Unit 6 did have a speed probe problem, but for unrelated circumstances.	Corrected faulty wiring connections and reinitiated programmable logic controller (PLC).
Riverside.7	Derate	Exciter transformer	4/10/12 18:54	4/11/12 20:40	Unit 7 Derate due to Unit 9 Generator Potential Transformer VT4 09-GS-PX-0003	Generator Potential Transformer failed, the phase to phase differential was great enough to run the unit back to full speed no load on voltage imbalance.		There were no similar outage during the time frame in question.	The potential transformer is of deficient design. Upgraded improvements were ordered to replace them all at the next opportunity. The new ones had a 3 month lead time so we were forced to reinstall inkind.
Riverside.9	Forced	Exciter transformer	4/10/12 18:54	4/11/12 20:40	Unit 9 Generator Potential Transformer VT4 09-GS-PX-0003	Generator Potential Transformer failed, the phase to phase differential was great enough to run the unit back to full speed no load on voltage imbalance.		There were no similar outage during the time frame in question.	The potential transformer is of deficient design. Upgraded improvements were ordered to replace them all at the next opportunity. The new ones had a 3 month lead time so we were forced to reinstall inkind.
Sherburne.3	Extension	Turbine Failure	4/1/12 0:00	4/30/12 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		Continued from 11/19/11 outage.	Re-design of the L-1 disk to blade attachment.
Wheaton.1G	Forced	Fire protection system instrumentation and control	4/24/12 9:37	4/26/12 16:30	CO2 discharged cause by false fire trip	End of line resistors improperly located from previous Fire Alarm upgrade shorted and tripped CO2 and unit		No similar failures were reported during this reporting period	Relocated end of line resistors outside of turbine compartment. Planning further upgrades on all other units
Wheaton.2G	Forced	Gas Turbine - Cooling Water System	4/25/12 7:00	4/26/12 9:30	Accessory Gear Water pump	Gear driver water pump developing high pitch sequel		No similar failures were reported during this reporting period	Engineering inspected and cleared pump for services
May-12									
BD25.CC	Extension	Other Safety Problems	5/1/12 0:00	5/31/12 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue needed to be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust.
French.Is.1	Maintenance	Service Water Piping	5/25/12 20:15	5/31/12 11:55	Service Water Piping	Scheduled replacement of corroded piping.		No similar failures were reported during this reporting period	This was a project to replace some 70 year old piping that was getting thin due to corrosion. Several sections of piping were replaced and we expect a long service with little or no issues.

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French.Is.2	Maintenance	Circulating Water Pumps	5/1/12 0:00	5/17/12 15:32	Circulating Water Pumps	Routine Maintenance		Continuation of the 4/27/13 outage.	This pump was inspected at the original equipment manufacturer's factory to assure extended service. Minor repairs were completed at the time to assure extended service.
French.Is.2	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	5/18/12 18:10	5/22/12 1:05	Boiler	Periodic Boiler Cleaning and Inspection		French Island Unit 2 underwent similar maintenance outages on 11/17/11, 1/17/12, 2/22/12, and 5/22/12 during this reporting period.	RDF fuel causes boiler fouling. We monitor the boiler fouling rate and schedule cleaning as required to maintain reliable operation.
French.Is.4	Forced	Gas Turbine Compressor - High Pressure Bearings	5/9/12 10:58	5/17/12 12:04	# 4 bearing High Vibration	Lack of grease in the trunions		No similar failures were reported during this reporting period	Each fall and spring we conduct preventative maintenance to grease the trunions.
HighBridge.7	Extension	Major Gas Turbine Overhaul	5/27/12 18:00	5/31/12 9:58	Combustion Section - Planned Outage Extension	Following a planned overhaul, combustion tuning of the refurbished combustion system required multiple fuel nozzle positioning changes and tuning runs.		Similar event 6/4/12-6/13/12 related to combustion tuning efforts following the combustion system overhaul.	After every overhaul, the combustion system requires tuning to optimize unit performance for emissions and reliability. The combustion section components installed during this outage required more fuel nozzle swaps and additional tuning efforts by original equipment manufacturer engineers than is typically the case. These tuning difficulties are inherent to the combustion system design of the Mitsubishi units.
HighBridge.9	Extension	Major Gas Turbine Overhaul	5/27/12 18:00	5/31/12 9:58	Unit 7 Combustion Section - Planned Outage Extension	Following a planned overhaul of Unit 7, combustion tuning of the refurbished Unit 7 combustion system required multiple fuel nozzle positioning changes and tuning runs.		Similar event for Unit 7 on 6/4/12-6/13/12 related to combustion tuning efforts following the combustion system overhaul.	After every overhaul, the combustion system requires tuning to optimize unit performance for emissions and reliability. The combustion section components installed during this outage required more fuel nozzle swaps and additional tuning efforts by original equipment manufacturer engineers than is typically the case. These tuning difficulties are inherent to the combustion system design of the Mitsubishi units.
Inver.Hills.1G	Maintenance	Gas Turbine - Lube Oil System - General	5/15/12 6:30	5/17/12 7:00	Unit was held out of service for preventive maintenance activities.	Lube Oil replacement required unit to be out of service.		No similar failures were reported during this reporting period	Lube oil was drained. Lube Oil tank cleaned. Lube Oil Tank was refilled with new lubricating oil.
Inver.Hills.1G	Forced	Generator Output Breaker	5/18/12 10:45	5/21/12 9:40	Generator Breaker	Charging system failed to prepare breaker for closure.		No similar failures were reported during this reporting period	Replaced cutoff switch and adjusted levers to allow closing mechanism to properly charge and close breaker.
Sherburne.2	Derate	High Pressure Heater Tube Leaks	5/14/12 15:28	5/17/12 23:22	27 High Pressure Feedwater Heater tube leak	This high pressure feedwater heater is at its end of life. Cumulative wear (36 years of service) of high pressure feedwater heater tubes from extraction steam erosion caused the leaks.		One similar failure was reported for Sherburne 2 on 11/3/11.	27 High Pressure Feedwater Heater will be replaced during the next major overhaul scheduled for the fall of 2013.
Sherburne.2	Derate	Circulating water piping	5/27/12 4:40	5/31/12 23:59	Cooling Tower makeup underground concrete pipe leak	Underground failure of 20" diameter pre-stressed concrete pipe and subsequent loss of makeup water to maintain cooling tower basin level. Derate required during repair since alternate source of water was a smaller source.		No similar failures were reported during this reporting period	Ordered spare replacement sections of concrete piping. Implemented an ultrasonic inspection technique to evaluate the health of existing underground concrete piping.
Sherburne.3	Extension	Turbine Failure	5/1/12 0:00	5/31/12 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		Continued from 11/19/11 outage.	Re-design of the L-1 disk to blade attachment.
Wheaton.1G	Forced	Fire protection system instrumentation and control	5/1/12 0:00	5/11/12 11:00	CO2 discharged cause by false fire trip	Wrong temp rated head installed in turbine compartment from previous upgrade tripped CO2 and unit		No similar failures were reported during this reporting period	Inspected heat detection heads on all units for designed temperature rating for installed location.
Wheaton.3G	Maintenance	Gas Turbine - Fire Detection And Extinguishing Sys	5/17/12 7:00	5/18/12 12:00	Verifying temp rating on heat heads	No equipment failure, verifying heat rating on installed heads		One previous problem with heat rating on installed head	Inspected heat detection heads on all units for designed temperature rating for installed location.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Wheaton.4G	Maintenance	Gas Turbine - Fire Detection And Extinguishing Sys	5/17/12 7:00	5/18/12 15:00	Verifying temp rating on heat heads	No equipment failure, verifying heat rating on installed heads		One previous problem with heat rating on installed head	Inspected heat detection heads on all units for designed temperature rating for installed location.
Jun-12									
Allen.S.King.1	Extension	Major Boiler Overhaul (720 Hours Or Longer)	6/3/12 23:59	6/7/12 23:40	11 & 12 Gas Fan installation	King Plant replaced both 11 & 12 Gas Fan during the Spring outage in 2012. A construction print was incorrect and seal plates that protect the fan hub were manufactured incorrectly. As a result new plates had to be manufactured delaying the startup of the fans.		No similar failures were reported during this reporting period	New process was developed for the King Plant to control receipt inspections.
Allen.S.King.1	Forced	Slag-tap (cyclone Furnace)	6/20/12 9:00	6/22/12 2:00	Slag Tap holes were covered over causing an outage.	King Plants slag flows to two openings on the boiler floor. The slag flows through these holes to a bottom ash pit. If slag cannot flow through the slag tap holes the unit must shut down and clean out the slag tap holes. This outage occurred because the vent line from the slag tank was plugged and not allowing slag to flow.		No similar failures were reported during this reporting period	We created preventive maintenance routes to inspect the line every year.
BD25.CC	Extension	Other Safety Problems	6/1/12 0:00	6/30/12 23:59	Unit 5 #6 bearing support strut	The Unit inspection revealed #6 main bearing support strut crack had grown beyond repair and the issue must be resolved before the unit could be returned to service.		Continuation of the issue starting on 10/04/2011	Exhaust section of turbine replaced with improved single piece exhaust. Exhaust replacement complete and unit returned to service on 8/9/2012.
Black.Dog.3	Extension	Boiler Inspections - Scheduled or Routine	6/3/12 23:00	6/19/12 13:27	Unit 3 Boiler	Extension of the planned outage due to discovery work found on the turbine reheat inlet valves and main steam stop valves.		No similar failures were reported during this reporting period	During future outages the inspection and monitoring of these valves will happen sooner during the outage to mitigate the likelihood of an extension.
Black.Dog.4	Derate	Flood	6/20/12 0:00	6/29/12 12:00	Flood derate, unit had full capabilities of generation.	Road limitations during a flood do not support continued generation of ash from coal burning due to a truck hauling route change. Coal burning was stopped during the flood and replaced with gas until normal truck hauling could resume.		Minnesota River Flooding occurred July 2011, August 2011 and June 2012 during this reporting period.	Flood procedure strategically allows for operations of the plants with deratement, replaceable with gas, to minimize bottom and fly ash generations and coal usage.
French.Is.2	Forced	Conductors And Buses	6/6/12 2:30	6/14/12 20:10	Generator Cable	Failed due to a leakage path to ground		No similar failures were reported during this reporting period	The cable was replaced and 2 projects were completed to replace both Unit 1 and Unit 2 generator cable sets. These cables have been in service for 70 years.
French.Is.2	Maintenance	Refractory (fbc Only)	6/15/12 17:50	6/21/12 19:55	Boiler	Refractory South Wall		One similar failures was reported during this reporting period in March	Refractory protects the boiler steel from heat. We perform periodic maintenance and patch refractory to maintain protection.
HighBridge.7	Derate	Other Gas Turbine Combustor Problems	6/4/12 11:36	6/13/12 16:45	Combustion Section	Following a planned overhaul, combustion tuning of the refurbished combustion system required multiple efforts to properly tune the combustion system.		This event is a continuation of the planned outage extension from 5/27 - 5/31.	After every overhaul, the combustion system requires tuning to optimize unit performance for emissions and reliability. The combustion section components installed during this outage required more fuel nozzle swaps and additional tuning efforts by original equipment manufacturer engineers than is typically the case. We will work more closely with the original equipment manufacturer to mitigate the combustion tuning effort in the future.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
HighBridge.9	Derate	Other Gas Turbine Combustor Problems	6/4/12 11:36	6/13/12 16:45	Unit 7 Combustion Section	Following a planned overhaul of Unit 7, combustion tuning of the refurbished Unit 7 combustion system required multiple efforts to properly tune the combustion system.		This event is a continuation of the Unit 7 planned outage extension of 5/27 - 5/31.	After every overhaul, the combustion system requires tuning to optimize unit performance for emissions and reliability. The combustion section components installed during this outage required more fuel nozzle swaps and additional tuning efforts by original equipment manufacturer engineers than is typically the case. These tuning difficulties are inherent to the combustion system design of the Mitsubishi units.
Inver.Hills.3G	Forced	Gas Turbine - Hydraulic Oil System	6/4/12 15:15	6/9/12 14:22	Auxiliary Hydraulic Pump	Auxiliary Hydraulic Pump operating when it should not be.		No similar failures were reported during this reporting period	Pressure switches repaired. This was a one time event, so no further actions were necessary to alleviate reoccurrence.
Inver.Hills.4G	Forced	Gas Turbine - Fire Detection And Extinguishing Sys	6/4/12 16:11	6/6/12 15:00	Fire Protection Damper	Fire Protection Damper closed during unit startup which trips the unit off.		No similar failures were reported during this reporting period	Wiring inspected and found to be incorrectly landed. Wiring connections modified as required to properly operate damper.
Inver.Hills.6G	Forced	Generator Synchronization Equipment	6/8/12 11:01	6/11/12 13:40	Speed Probe	Speed probe noise creating controls issues preventing normal unit start.		There were no similar failures of this type during the time frame in question. However, Unit 3 did have a speed probe problem, but for unrelated circumstances.	This issue followed a unit overhaul where speed probes were disconnected to allow maintenance on the turbine. System was inspected and reconnected during investigation of this problem which resolved the issue.
Riverside.10	Extension	Other Hydrogen System Problems	6/16/12 6:00	6/19/12 11:00	U10 Generator Hydrogen Analyzer Programmable Logic Controller failure	Unit 10 Turbine end hydrogen analyzer display failed on analyzer.		There were no similar outage during the time frame in question.	Internal logic controller electrical component failure could not have been anticipated, we stock replacements if necessary.
Riverside.7	Derate	Other Hydrogen System Problems	6/16/12 6:00	6/19/12 11:00	Unit 7 Derate due to U10 Generator Hydrogen Analyzer PLC failure	Unit 10 Turbine end hydrogen analyzer display failed on analyzer.		There were no similar outage during the time frame in question.	Internal logic controller electrical component failure could not have been anticipated, we stock replacements if necessary.
Sherburne.1	Forced	Waterwall (Furnace Wall)	6/25/12 20:30	6/27/12 20:56	Boiler waterwall tube leak	North boiler wall, 8th floor near B10 sootblower. Leak initiated from a slag area found in the weld to base metal interface, likely a start/stop area. This was a new tube installation during the spring planned outage.		No similar failures were reported during this reporting period	We began to add into our construction contracts the requirement to use phased array "cobra" probe testing (non-destructive examination) that is small enough to slip in between two boiler tubes (1/2") to monitor the quality and acceptance of weld repairs.
Sherburne.2	Derate	Circulating water piping	6/1/12 0:00	6/2/12 8:22	Cooling Tower makeup underground concrete pipe leak	Underground failure of 20" diameter pre-stressed concrete pipe and subsequent loss of makeup water to maintain cooling tower basin level. Derate required during repair since alternate source of water was a smaller source.		Continuation of the May event	Ordered spare replacement sections of concrete piping and have them in stock. Implementing an ultrasonic inspection technique to evaluate the health of existing underground concrete piping.
Sherburne.2	Derate	First Reheater Leaks	6/2/12 8:22	6/10/12 20:00	Tube leak in the Reheat section of the boiler cause a derate.	During the above Sherburne 2 cooling tower makeup piping leak, a tube leak developed in the reheat section of the boiler. It was a management decision to maintain the derate and avoid further collateral damage to the tube leak until other units in the NSP system could return to service following their planned outages. This reheat leak caused the plant to take an outage starting on 6/14/12.		Continuation of the May event	Thorough inspection, repair and shielding of the reheat section is planned during the next major overhaul. This section of the boiler will be replaced in 2019.

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Unit	Outage Category	Primary Reason for outage	Outage Dates		Q1. Equipment that resulted in the forced outage	Q2. Description of Equipment Failure	Q3. Change in Energy Costs	Q4. Failure History During Reporting Period	Q5. Steps Taken to Alleviate Reoccurrence
			Start	End					
Sherburne.2	Derate	Induced Draft Fan Fouling	6/10/12 20:00	6/14/12 22:29	23 Induced Draft Fan	During the above Sherburne 2 cooling tower makeup piping leak, 23 ID Fan was removed from service in order to inspect the rotor due to high vibration. The fan rotor was cleaned, and during the re-start, the upper half outboard bearing failed. After analysis, it was determined that the upper bearing cap had a pre-existing crack, likely from original manufacturing, that failed.		No similar failures were reported during this reporting period	All other similar bearings were inspected for cracks, none found. We have performed full spectrum vibration analysis on all remaining ID fans and found no immediate concerns.
Sherburne.2	Maintenance	Induced Draft Fan and First Reheater Leak	6/14/12 22:29	6/21/12 8:17	Front Reheater	The reheat tube leak was found on the 7th pendant from the east side, 4th tube in due to a stress crack. Most of the duration for this outage was the repair of 23 ID Fan bearing.		No similar failures were reported during this reporting period	See above mitigation techniques for Sherburne 2.
Sherburne.3	Extension	Turbine Failure	6/1/12 0:00	6/30/12 23:59	Low pressure turbine, L-1 disk	During turbine overspeed trip testing, turbine blades failed at the L-1 disk, finger pinned blade attachment due to stress corrosion cracking.		Continued from 11/19/11 outage.	Re-design of the L-1 disk to blade attachment.
Wheaton.2G	Forced	Generator Output Breaker	6/6/12 19:10	6/15/12 9:16	Generator Breaker Trip coil	Trip coil failed to open Generator Breaker on shutdown resulting in an 86 lock out and unit trip		No similar failures were reported during this reporting period	New trip coil installed. All circuitry checked and tested
Wheaton.4G	Maintenance	Other Fire Protection System Problems	6/4/12 7:00	6/8/12 18:00	Verifying temp rating on heat heads	No equipment failure, verifying heat rating on installed heads		One previous problem with heat rating on installed head	Inspect heat detection heads on all units for designed temperature rating for installed location
Wheaton.4G	Forced	Generator Output Breaker	6/11/12 6:00	6/13/12 9:00	Generator Breaker Main Trip prop assembly	Breaker did not trip on shutdown resulting in 86 lock out and unit trip		No similar failures were reported during this reporting period	New main trip prop assembly installed. Upgraded assembly per Powell Breakers. All other units Gen Breakers confirmed upgrade had been made
Wheaton.4G	Forced	Generator Output Breaker	6/15/12 22:00	6/19/12 12:00	Limit Switch in Breaker cubicle	Limit Switch failed in cubical that indicated breaker is ready for operation		No similar failures were reported during this reporting period	The circuit was found to be okay, but the limit switch failed. The switch was replaced and tested.
Willmarth.1	Forced	Generator Vibration	6/6/12 18:22	6/10/12 1:00	Unit 1 Turbine and Generator #1 and #3 Bearings	Increase in vibrations from being out of balance after an electrical event in the substation.		No similar failures were reported during this reporting period	We performed a balance shot on the turbine and generator. This resolved the vibration issue. The event was caused from a grid system event that is unknown to the plant i.e. lightning, car crash, etc. We are upgrading our generator relay protection system in 2014.

TRADE SECRET
DATA ENDS]

Summary of Revised Baseload Units Outage Costs (July 2011 - July 2012)

	A.S. King 1	Black Dog 3	Black Dog 4	Monticello 1	Prairie Island 1	Prairie Island 2	Sherburne 1	Sherburne 2	Sherburne 3	Total
Original										
Jul-2011	\$290,822	\$0	\$147,845	\$0	\$287,147	\$27,236	\$402,837	\$0	\$0	\$1,155,887
Aug-2011	\$0	\$103,488	\$146,453	\$401,566	\$0	\$0	\$170,294	\$0	\$22,290	\$844,091
Sep-2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Oct-2011	\$221,796	\$7,079	\$24,365	\$680,839	\$89,818	\$1,706,472	\$0	\$0	\$0	\$2,730,369
Nov-2011	\$0	\$0	\$0	\$1,132,233	\$0	\$0	\$0	\$0	\$0	\$1,132,233
Dec-2011	\$200,592	\$0	\$208,086	\$324,965	\$251,868	\$0	\$0	\$0	\$1,750,327	\$2,735,838
Jan-2012	\$0	\$15,021	\$0	\$0	\$0	\$0	\$0	\$0	\$461,461	\$476,482
Feb-2012	\$0	\$0	\$112,505	\$0	\$0	\$1,542,306	\$0	\$0	\$417,410	\$2,072,221
Mar-2012	\$0	\$15,173	\$30,070	\$0	\$0	\$4,083,826	\$549,658	\$0	\$337,180	\$5,015,907
Apr-2012	\$33,060	\$32,882	\$38,059	\$0	\$0	\$3,865,863	\$1,885,265	\$0	\$1,420,934	\$7,276,063
May-2012	\$2,650,795	\$300,196	\$0	\$0	\$0	\$5,926,487	\$1,514,857	\$2,153,743	\$3,689,667	\$16,235,745
Jun-2012	\$1,042,377	\$235,466	\$23,575	\$0	\$0	\$0	\$2,982,010	\$2,547,216	\$4,348,945	\$11,179,589
Jul-2012	\$0	\$0	\$381,382	\$0	\$0	\$0	\$560,944	\$0	\$7,495,661	\$8,437,987
Total										\$59,292,412
Revision										
Jul-2011	\$373,057	\$0	\$1,764,303	\$0	\$534,125	\$486,653	\$568,094	\$0	\$0	\$3,726,232
Aug-2011	\$0	\$106,997	\$401,553	\$752,537	\$0	\$0	\$270,446	\$0	\$58,583	\$1,590,116
Sep-2011	\$0	\$83,267	\$87,627	\$0	\$0	\$0	\$0	\$0	\$0	\$170,894
Oct-2011	\$601,943	\$167,400	\$325,405	\$1,576,953	\$148,648	\$3,339,161	\$0	\$0	\$908,085	\$7,067,595
Nov-2011	\$0	\$10,067	\$25,252	\$2,202,939	\$0	\$0	\$0	\$0	\$289,078	\$2,527,336
Dec-2011	\$183,383	\$0	\$208,086	\$324,369	\$251,868	\$0	\$0	\$0	\$792,253	\$1,759,959
Jan-2012	\$0	\$12,022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,022
Feb-2012	\$0	\$0	\$9,040	\$0	\$0	\$1,534,288	\$0	\$0	\$0	\$1,543,328
Mar-2012	\$0	\$343	\$1,553	\$0	\$0	\$3,899,685	\$0	\$0	\$0	\$3,901,581
Apr-2012	\$12,916	\$13,779	\$23,925	\$0	\$0	\$3,683,803	\$1,310,028	\$0	\$951,547	\$5,995,998
May-2012	\$2,352,158	\$273,124	\$0	\$0	\$0	\$5,812,223	\$1,449,189	\$2,005,168	\$3,449,193	\$15,341,055
Jun-2012	\$1,021,930	\$198,396	\$21,742	\$0	\$0	\$0	\$2,862,858	\$2,389,728	\$4,059,696	\$10,554,350
Jul-2012	\$0	\$0	\$376,795	\$0	\$0	\$0	\$549,688	\$0	\$7,455,440	\$8,381,923
Total										\$62,572,389
Difference										
Jul-2011	\$82,235	\$0	\$1,616,458	\$0	\$246,978	\$459,417	\$165,257	\$0	\$0	\$2,570,345
Aug-2011	\$0	\$3,509	\$255,100	\$350,971	\$0	\$0	\$100,152	\$0	\$36,293	\$746,025
Sep-2011	\$0	\$83,267	\$87,627	\$0	\$0	\$0	\$0	\$0	\$0	\$170,894
Oct-2011	\$380,147	\$160,321	\$301,040	\$896,114	\$58,830	\$1,632,689	\$0	\$0	\$908,085	\$4,337,226
Nov-2011	\$0	\$10,067	\$25,252	\$1,070,706	\$0	\$0	\$0	\$0	\$289,078	\$1,395,103
Dec-2011	-\$17,209	\$0	\$0	-\$596	\$0	\$0	\$0	\$0	-\$958,074	-\$975,879
Jan-2012	\$0	-\$2,999	\$0	\$0	\$0	\$0	\$0	\$0	-\$461,461	-\$464,460
Feb-2012	\$0	\$0	-\$103,465	\$0	\$0	-\$8,018	\$0	\$0	-\$417,410	-\$528,893
Mar-2012	\$0	-\$14,830	-\$28,517	\$0	\$0	-\$184,141	-\$549,658	\$0	-\$337,180	-\$1,114,326
Apr-2012	-\$20,144	-\$19,103	-\$14,134	\$0	\$0	-\$182,060	-\$575,237	\$0	-\$469,387	-\$1,280,065
May-2012	-\$298,637	-\$27,072	\$0	\$0	\$0	-\$114,264	-\$65,668	-\$148,575	-\$240,474	-\$894,690
Jun-2012	-\$20,447	-\$37,070	-\$1,833	\$0	\$0	\$0	-\$119,152	-\$157,488	-\$289,249	-\$625,239
Jul-2012	\$0	\$0	-\$4,587	\$0	\$0	\$0	-\$11,256	\$0	-\$40,221	-\$56,064
Total										\$3,279,977

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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Forced	First Reheater Leaks	07/07/2011	07/10/2011	2		912,667		
BD25.CC	Steam	Maintenance	Gas Turbine - Boroscope Inspection	07/23/2011	07/27/2011	4		1,116,175		
BD25.CC	Steam	Forced	Inverters	07/28/2011	07/30/2011	1		374,202		
Black.Dog.4	Steam	Derate	Flood	07/05/2011	07/20/2011	15		1,973,389		
Black.Dog.4	Steam	Derate	Flood	07/20/2011	07/31/2011	11		1,789,915		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	07/01/2011	07/05/2011	4		38,852		
Granite.City.3	Peaking	Forced	Protection Devices	07/01/2011	07/19/2011	18		366,375		
Granite.City.4	Peaking	Forced	Protection Devices	07/01/2011	07/19/2011	18		340,069		
HighBridge.7	CC	Forced	HP Startup bypass system valves	07/20/2011	07/25/2011	4		767,514		
HighBridge.8	CC	Maintenance	HP Startup bypass system valves	07/23/2011	07/24/2011	1		246,111		
HighBridge.9	CC	Derate	HP Startup bypass system valves	07/20/2011	07/23/2011	2		250,230		
HighBridge.9	CC	Maintenance	HP Startup bypass system valves	07/23/2011	07/24/2011	1		272,156		
HighBridge.9	CC	Derate	HP Startup bypass system valves	07/24/2011	07/25/2011	1		122,798		
Inver.Hills.5G	Peaking	Forced	4000-6000-volt Circuit Breakers	07/08/2011	07/18/2011	10		596,255		
Inver.Hills.6G	Peaking	Maintenance	4000-6000-volt Transformers	07/14/2011	07/18/2011	4		261,675		
Key.City.1	Peaking	Maintenance	Gas Turbine - Load Shaft And Bearings	07/01/2011	07/31/2011	31		554,012		
Key.City.3	Peaking	Forced	Gas Turbine - Turning Gear And Motor	07/22/2011	07/31/2011	9		179,379		
Prairie.Island.1	Nuclear	Forced	Turbine Main Stop Valves	07/01/2011	07/02/2011	1		780,991		
Red.Wing.2	RDF	Forced	Cems - Opacity Monitor Problems	07/09/2011	07/13/2011	3		22,277		
Riverside.10	CC	Maintenance	Condenser Tube And Water Box Cleaning	07/13/2011	07/14/2011	1		129,072		
Riverside.7	CC	Maintenance	Condenser Tube And Water Box Cleaning	07/13/2011	07/14/2011	1		165,949		
Riverside.9	CC	Maintenance	Condenser Tube And Water Box Cleaning	07/13/2011	07/14/2011	1		129,072		
Sherburne.1	Steam	Forced	Waterwall (Furnace Wall)	07/08/2011	07/10/2011	2		1,430,985		
Wheaton.1G	Peaking	Forced	Emergency Generator Trip Devices	07/01/2011	07/05/2011	3		256,019		
Wheaton.1G	Peaking	Forced	Emergency Generator Trip Devices	07/05/2011	07/13/2011	7		473,437		
Forced Outages - Totals						155		13,549,576		
Prairie.Island.2	Nuclear	Scheduled	Excure Nuclear Instrumentation	07/06/2011	07/07/2011	1		657,408		
Wheaton.5	Peaking	Scheduled	Ac Instrument Power Transformers	07/01/2011	07/25/2011	24		1,501,075		
Scheduled Outages - Totals						25		2,158,483		
Total						180		15,708,059		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	5,432,990
Total Replacement Purchase MWh	394,496
Increased Cost per MWh	\$13.77

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Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen S King 1	Steam	Forced	First Reheater Leaks	07/07/2011	07/10/2011	2		778,219		
BD25 CC	Steam	Maintenance	Gas Turbine - Boroscope Inspector	07/23/2011	07/27/2011	4		838,184		
BD25 CC	Steam	Forced	Inverters	07/28/2011	07/30/2011	1		195,269		
Black Dog 4	Steam	Derate	Flood	07/05/2011	07/20/2011	15		128,088		
Black Dog 4	Steam	Derate	Flood	07/20/2011	07/31/2011	11		190,555		
French Is 1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	07/01/2011	07/05/2011	4		38,465		
Granite City 3	Peaking	Forced	Protection Devices	07/01/2011	07/19/2011	18		353,696		
Granite City 4	Peaking	Forced	Protection Devices	07/01/2011	07/19/2011	18		327,300		
HighBridge 7	CC	Forced	HP Startup bypass system valves	07/20/2011	07/25/2011	4		634,392		
HighBridge 8	CC	Maintenance	HP Startup bypass system valves	07/23/2011	07/24/2011	1		119,869		
HighBridge 9	CC	Derate	HP Startup bypass system valves	07/20/2011	07/23/2011	2		252,384		
HighBridge 9	CC	Maintenance	HP Startup bypass system valves	07/23/2011	07/24/2011	1		138,031		
HighBridge 9	CC	Derate	HP Startup bypass system valves	07/24/2011	07/25/2011	1		104,376		
Inver Hills 5G	Peaking	Forced	4000-6000-volt Circuit Breakers	07/08/2011	07/18/2011	10		679,661		
Inver Hills 6G	Peaking	Maintenance	4000-6000-volt Transformers	07/14/2011	07/18/2011	4		278,004		
Key City 1	Peaking	Maintenance	Gas Turbine - Load Shaft And Bearing	07/01/2011	07/31/2011	31		564,458		
Key City 3	Peaking	Forced	Gas Turbine - Turning Gear And Moto	07/22/2011	07/31/2011	9		176,481		
Prairie Is 1	Nuclear	Forced	Turbine Main Stop Valves	07/01/2011	07/02/2011	1		425,272		
Red Wing 2	RDF	Forced	Cems - Opacity Monitor Problems	07/09/2011	07/13/2011	3		18,518		
Riverside 10	CC	Maintenance	Condenser Tube And Water Box Cleaning	07/13/2011	07/14/2011	1		100,531		
Riverside 7	CC	Maintenance	Condenser Tube And Water Box Cleaning	07/13/2011	07/14/2011	1		129,254		
Riverside 9	CC	Maintenance	Condenser Tube And Water Box Cleaning	07/13/2011	07/14/2011	1		100,531		
Sherburne 1	Steam	Forced	Waterwall (Furnace Wall)	07/08/2011	07/10/2011	2		1,082,054		
Wheaton 1G	Peaking	Forced	Emergency Generator Trip Devices	07/01/2011	07/05/2011	3		218,772		
Wheaton 1G	Peaking	Forced	Emergency Generator Trip Devices	07/05/2011	07/13/2011	7		510,468		
Forced Outages - Totals						155		8,382,832		
Prairie Is 2	Nuclear	Scheduled	Excure Nuclear Instrumentation	07/06/2011	07/07/2011	1		37,368		
Wheaton 5	Peaking	Scheduled	Ac Instrument Power Transformers	07/01/2011	07/25/2011	24		1,664,626		
Scheduled Outages - Totals						25		1,701,994		
Total						180		10,084,826		

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- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days
- (3) Only costs for planned outage days within the specific forecast month (i.e. July 2011) are listed, the completion date of the outage may be into the following month or beyond.

Total Change in Energy Costs	\$ 1,513,183
Total Replacement Purchase MWh	237,571
Increased Cost per MWh	\$ 6.37

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Forced	Pilot fuel nozzles/vanes	08/24/2011 - 08/25/2011	1		271,836		
Black.Dog.3	Steam	Forced	Second Reheater Leaks	08/16/2011 - 08/23/2011	7		337,432		
Black.Dog.4	Steam	Derate	Flood	08/01/2011 - 08/06/2011	5		141,496		
Black.Dog.4	Steam	Derate	Flood	08/06/2011 - 08/14/2011	7		746,232		
Black.Dog.4	Steam	Forced	Emergency Generator Trip Devices	08/14/2011 - 08/15/2011	1		139,210		
Black.Dog.4	Steam	Derate	Flood	08/15/2011 - 08/27/2011	11		149,834		
Blue.Lake.1	Peaking	Maintenance	Gas Turbine - Hydraulic Oil System	08/08/2011 - 08/10/2011	2		442,637		
Blue.Lake.7	Peaking	Forced	Gas Turbine - Starting System (including Motor)	08/24/2011 - 08/26/2011	1		285,517		
Blue.Lake.8	Peaking	Maintenance	Gas Turbine - Gas Fuel System	08/09/2011 - 08/11/2011	1		280,071		
Blue.Lake.8	Peaking	Forced	Gas Turbine - Starting System (including Motor)	08/24/2011 - 08/26/2011	1		297,826		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	08/05/2011 - 08/09/2011	3		32,189		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	08/19/2011 - 08/25/2011	5		56,605		
HighBridge.7	CC	Maintenance	HP Startup bypass system valves	08/05/2011 - 08/07/2011	2		367,587		
HighBridge.8	CC	Maintenance	HP Startup bypass system valves	08/05/2011 - 08/07/2011	2		384,490		
HighBridge.9	CC	Maintenance	HP Startup bypass system valves	08/05/2011 - 08/07/2011	2		423,282		
Inver.Hills.3G	Peaking	Forced	4000-6000-volt Circuit Breakers	08/10/2011 - 08/12/2011	1		110,588		
Inver.Hills.4G	Peaking	Forced	4000-6000-volt Circuit Breakers	08/10/2011 - 08/12/2011	1		105,870		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearings	08/01/2011 - 08/31/2011	31		585,253		
Monticello.1	Nuclear	Derate	Condensate/hotwell Pump Motor	08/06/2011 - 08/07/2011	1		684,275		
Monticello.1	Nuclear	Derate	Condensate/hotwell Pump Motor	08/27/2011 - 08/29/2011	2		494,039		
Red.Wing.2	RDF	Forced	Coal Conveyor Scales-storage Coal Pile	08/05/2011 - 08/08/2011	3		22,035		
Sherburne.1	Steam	Forced	Other Boiler Tube Leaks	08/16/2011 - 08/17/2011	1		816,579		
Sherburne.3	Steam	Derate	Dry Scrubber - Spray Machine/atomizer	08/04/2011 - 08/06/2011	1		137,783		
Wheaton.6	Peaking	Forced	Other PLC problems	08/16/2011 - 08/31/2011	15		929,561		
Forced Outages - Totals						107	8,242,227		
Angus.Anson.4	Peaking	Scheduled	Switchyard system protection devices - external	08/26/2011 - 08/31/2011	5		708,543		
Black.Dog.4	Steam	Scheduled	Condenser Tube And Water Box Cleaning	08/27/2011 - 08/29/2011	2		147,136		
Monticello.1	Nuclear	Scheduled	Control Rod Pattern Changes & Control Rod Repatch	08/29/2011 - 08/31/2011	1		36,266		
Scheduled Outages - Totals						3	183,402		
Total						110	8,425,629		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
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Total Change in Energy Costs	2,127,560
Total Replacement Purchase MWh	233,759
Increased Cost per MWh	\$9.10

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Forced	Pilot fuel nozzles/vanes	08/24/2011 - 08/25/2011	1		167,147		
Black.Dog.3	Steam	Forced	Second Reheater Leaks	08/16/2011 - 08/23/2011	7		361,302		
Black.Dog.4	Steam	Derate	Flood	08/01/2011 - 08/06/2011	5		65,081		
Black.Dog.4	Steam	Derate	Flood	08/06/2011 - 08/14/2011	7		115,060		
Black.Dog.4	Steam	Forced	Emergency Generator Trip Devices	08/14/2011 - 08/15/2011	1		105,983		
Black.Dog.4	Steam	Derate	Flood	08/15/2011 - 08/27/2011	11		204,019		
Blue.Lake.1	Peaking	Maintenance	Gas Turbine - Hydraulic Oil System	08/08/2011 - 08/10/2011	2		372,747		
Blue.Lake.7	Peaking	Forced	Gas Turbine - Starting System (including Motor)	08/24/2011 - 08/26/2011	1		119,590		
Blue.Lake.8	Peaking	Maintenance	Gas Turbine - Gas Fuel System	08/09/2011 - 08/11/2011	1		130,932		
Blue.Lake.8	Peaking	Forced	Gas Turbine - Starting System (including Motor)	08/24/2011 - 08/26/2011	1		130,932		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	08/05/2011 - 08/09/2011	3		28,854		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	08/19/2011 - 08/25/2011	5		48,518		
HighBridge.7	CC	Maintenance	HP Startup bypass system valves	08/05/2011 - 08/07/2011	2		266,508		
HighBridge.8	CC	Maintenance	HP Startup bypass system valves	08/05/2011 - 08/07/2011	2		257,479		
HighBridge.9	CC	Maintenance	HP Startup bypass system valves	08/05/2011 - 08/07/2011	2		296,400		
Inver.Hills.3G	Peaking	Forced	4000-6000-volt Circuit Breakers	08/10/2011 - 08/12/2011	1		63,193		
Inver.Hills.4G	Peaking	Forced	4000-6000-volt Circuit Breakers	08/10/2011 - 08/12/2011	1		60,355		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearing	08/01/2011 - 08/31/2011	31		583,028		
Monticello.1	Nuclear	Derate	Condensate/hotwell Pump Motor	08/06/2011 - 08/07/2011	1		239,879		
Monticello.1	Nuclear	Derate	Condensate/hotwell Pump Motor	08/27/2011 - 08/29/2011	2		388,596		
Red.Wing.2	RDF	Forced	Coal Conveyor Scales-storage Coal Pile	08/05/2011 - 08/08/2011	3		17,205		
Sherburne.1	Steam	Forced	Other Boiler Tube Leaks	08/16/2011 - 08/17/2011	1		510,880		
Sherburne.3	Steam	Derate	Dry Scrubber - Spray Machine/atomizer	08/04/2011 - 08/06/2011	1		78,185		
Wheaton.6	Peaking	Forced	Other PLC problems	08/16/2011 - 08/31/2011	15		875,347		
Forced Outages - Totals						107	5,487,220		
Angus.Anson.4	Peaking	Scheduled	Switchyard system protection devices - externa	08/26/2011 - 08/31/2011	5		665,532		
Black.Dog.4	Steam	Scheduled	Condenser Tube And Water Box Cleaning	08/27/2011 - 08/29/2011	2		180,643		
Monticello.1	Nuclear	Scheduled	Control Rod Pattern Changes & Control Rod Repatch	08/29/2011 - 08/31/2011	1		33,268		
Scheduled Outages - Totals						8	879,443		
Total						115	6,366,663		

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- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days
- (3) Only costs for planned outage days within the specific forecast month (i.e. August 2011) are listed, the completion date of the outage may be into the following month or beyond.

Total Change in Energy Costs	\$ 1,028,404
Total Replacement Purchase MWh	178,498
Increased Cost per MWh	\$ 5.76

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Maintenance	Condenser Tube Sheet Fouling	09/08/2011 - 09/09/2011	1		283,490		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	09/12/2011 - 09/14/2011	2		492,229		
HighBridge.7	CC	Maintenance	Other Miscellaneous External Problems	09/21/2011 - 09/22/2011	1		108,488		
HighBridge.9	CC	Maintenance	Other Miscellaneous External Problems	09/21/2011 - 09/22/2011	1		124,925		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearings	09/01/2011 - 09/30/2011	30		491,400		
Riverside.10	CC	Maintenance	Gas Turbine Cleaning	09/13/2011 - 09/15/2011	1		179,676		
Riverside.7	CC	Maintenance	Gas Turbine Cleaning	09/13/2011 - 09/14/2011	1		116,550		
Riverside.9	CC	Maintenance	Gas Turbine Cleaning	09/13/2011 - 09/14/2011	1		90,650		
Wheaton.1G	Peaking	Forced	Dc Circuit Breakers	09/16/2011 - 09/19/2011	2		185,714		
Wheaton.1G	Peaking	Forced	Dc Circuit Breakers	09/23/2011 - 09/26/2011	2		193,907		
Wheaton.2G	Peaking	Forced	Other Dc Power Problems	09/29/2011 - 09/30/2011	1		82,731		
Wheaton.6	Peaking	Forced	Other PLC problems	09/01/2011 - 09/14/2011	13		828,917		
Forced Outages - Totals						56	3,178,677		
BD25.CC	Steam	Scheduled	Other Safety Problems	09/23/2011 - 09/30/2011	7		1,361,367		
Black.Dog.3	Steam	Scheduled	Other Safety Problems	09/21/2011 - 09/30/2011	9		366,738		
Black.Dog.4	Steam	Scheduled	Other Safety Problems	09/24/2011 - 09/30/2011	6		469,528		
Blue.Lake.7	Peaking	Scheduled	Gas Turbine - Gas Fuel System	09/19/2011 - 09/30/2011	12		1,524,744		
Blue.Lake.8	Peaking	Scheduled	Gas Turbine - Gas Fuel System	09/19/2011 - 09/30/2011	11		1,587,743		
Red.Wing.1	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	09/24/2011 - 09/30/2011	5		25,926		
Red.Wing.2	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	09/25/2011 - 09/30/2011	5		25,178		
Sherburne.3	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	09/15/2011 - 09/30/2011	15		2,782,542		
Willmarth.1	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	09/18/2011 - 09/24/2011	6		29,728		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	09/19/2011 - 09/25/2011	6		29,035		
Scheduled Outages - Totals						82	8,202,529		
Total						138	11,381,206		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	327,489
Total Replacement Purchase MWh	372,901
Increased Cost per MWh	\$0.88

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Maintenance	Condenser Tube Sheet Fouling	09/08/2011 - 09/09/2011	1		174,871		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	09/12/2011 - 09/14/2011	2		387,328		
HighBridge.7	CC	Maintenance	Other Miscellaneous External Problems	09/21/2011 - 09/22/2011	1		103,712		
HighBridge.9	CC	Maintenance	Other Miscellaneous External Problems	09/21/2011 - 09/22/2011	1		119,426		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearings	09/01/2011 - 09/30/2011	30		491,400		
Riverside.10	CC	Maintenance	Gas Turbine Cleaning	09/13/2011 - 09/15/2011	1		86,957		
Riverside.7	CC	Maintenance	Gas Turbine Cleaning	09/13/2011 - 09/14/2011	1		111,802		
Riverside.9	CC	Maintenance	Gas Turbine Cleaning	09/13/2011 - 09/14/2011	1		86,957		
Wheaton.1G	Peaking	Forced	Dc Circuit Breakers	09/16/2011 - 09/19/2011	2		131,092		
Wheaton.1G	Peaking	Forced	Dc Circuit Breakers	09/23/2011 - 09/26/2011	2		131,092		
Wheaton.2G	Peaking	Forced	Other Dc Power Problems	09/29/2011 - 09/30/2011	1		66,185		
Wheaton.6	Peaking	Forced	Other PLC problems	09/01/2011 - 09/14/2011	13		799,945		
Forced Outages - Totals						56	2,690,767		
BD25.CC	Steam	Scheduled	Other Safety Problems	09/23/2011 - 09/30/2011	7		1,224,098		
Black.Dog.3	Steam	Scheduled	Other Safety Problems	09/21/2011 - 09/30/2011	9		331,476		
Black.Dog.4	Steam	Scheduled	Other Safety Problems	09/24/2011 - 09/30/2011	6		460,462		
Blue.Lake.7	Peaking	Scheduled	Gas Turbine - Gas Fuel System	09/19/2011 - 09/30/2011	12		1,496,664		
Blue.Lake.8	Peaking	Scheduled	Gas Turbine - Gas Fuel System	09/19/2011 - 09/30/2011	11		1,511,503		
Red.Wing.1	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	09/24/2011 - 09/30/2011	5		20,266		
Red.Wing.2	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	09/25/2011 - 09/30/2011	5		19,594		
Sherburne.3	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	09/15/2011 - 09/30/2011	15		4,761,947		
Willmarth.1	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	09/18/2011 - 09/24/2011	6		20,840		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	09/19/2011 - 09/25/2011	6		21,197		
Scheduled Outages - Totals						82	9,868,047		
Total						138	12,558,814		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days
- (3) Only costs for planned outage days within the specific forecast month (i.e. September 2011) are listed, the completion date of the outage may be into the following month or beyond.

Total Change in Energy Costs	\$ -
Total Replacement Purchase MWh	416,978
Increased Cost per MWh	\$ -

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	10/04/2011 - 10/31/2011	28		5,371,268		
Black.Dog.3	Steam	Extension	Other Safety Problems	10/04/2011 - 10/08/2011	4		207,095		
Black.Dog.3	Steam	Forced	Second Reheater Leaks	10/12/2011 - 10/13/2011	1		53,710		
Black.Dog.3	Steam	Extension	Debris in Circulating water from outside sources	10/31/2011 - 10/31/2011	1		47,171		
Black.Dog.4	Steam	Extension	Other Safety Problems	10/04/2011 - 10/10/2011	6		494,224		
Black.Dog.4	Steam	Extension	Debris in Circulating water from outside sources	10/31/2011 - 10/31/2011	1		88,901		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	10/07/2011 - 10/11/2011	4		40,848		
French.Is.1	RDF	Maintenance	Stacks	10/27/2011 - 10/31/2011	3		31,637		
French.Is.2	RDF	Maintenance	Stacks	10/20/2011 - 10/24/2011	3		33,904		
French.Is.4	Peaking	Maintenance	4000-6000-volt Transformers	10/17/2011 - 10/31/2011	14		5,593,581		
Inver.Hills.1G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/19/2011 - 10/21/2011	2		135,248		
Inver.Hills.2G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/13/2011 - 10/14/2011	1		76,083		
Inver.Hills.3G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/18/2011 - 10/20/2011	2		141,490		
Inver.Hills.4G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/17/2011 - 10/19/2011	2		118,776		
Inver.Hills.5G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/10/2011 - 10/11/2011	1		72,793		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearings	10/01/2011 - 10/31/2011	31		575,901		
Monticello.1	Nuclear	Derate	Power Limited By Rod Pattern.	10/05/2011 - 10/06/2011	1		20,787		
Monticello.1	Nuclear	Forced	Safeguard Buses And Assoc. Equipment (transfrm,..)	10/21/2011 - 10/28/2011	6		2,560,410		
Prairie.Island.1	Nuclear	Derate	Heater Level Control	10/03/2011 - 10/04/2011	1		19,600		
Prairie.Island.2	Nuclear	Forced	Reactor Coolant/recirculating Pumps	10/04/2011 - 10/20/2011	15		5,369,172		
Wheaton.1G	Peaking	Forced	Other Dc Power Problems	10/04/2011 - 10/05/2011	1		68,448		
Wheaton.2G	Peaking	Forced	Programmable Logic Controller (PLC)	10/06/2011 - 10/31/2011	25		1,757,338		
Wheaton.3G	Peaking	Forced	Other Generator Controls And Metering Problems	10/11/2011 - 10/31/2011	20		1,241,460		
Wheaton.5	Peaking	Maintenance	General Gas Turbine Unit Inspection	10/13/2011 - 10/21/2011	8		493,520		
Wheaton.6	Peaking	Maintenance	General Gas Turbine Unit Inspection	10/26/2011 - 10/27/2011	1		78,412		
Forced Outages - Totals					182		24,692,377		
Allen.S.King.1	Steam	Scheduled	Boiler Tube Fireside Cleaning	10/23/2011 - 10/29/2011	5		1,928,877		
BD25.CC	Steam	Scheduled	Other Safety Problems	10/01/2011 - 10/04/2011	3		534,246		
Black.Dog.3	Steam	Scheduled	Other Safety Problems	10/01/2011 - 10/04/2011	3		103,866		
Black.Dog.3	Steam	Scheduled	Debris in Circulating water from outside sources	10/22/2011 - 10/31/2011	8		358,698		
Black.Dog.4	Steam	Scheduled	Other Safety Problems	10/01/2011 - 10/04/2011	3		194,775		
Black.Dog.4	Steam	Scheduled	Debris in Circulating water from outside sources	10/23/2011 - 10/31/2011	7		633,007		
Blue.Lake.7	Peaking	Scheduled	Gas Turbine - Gas Fuel System	10/01/2011 - 10/24/2011	23		2,932,023		
Blue.Lake.8	Peaking	Scheduled	Gas Turbine - Gas Fuel System	10/01/2011 - 10/10/2011	9		1,297,252		
Blue.Lake.8	Peaking	Scheduled	Gas Turbine - Gas Fuel System	10/13/2011 - 10/24/2011	10		1,432,014		
Prairie.Island.1	Nuclear	Scheduled	Circulating water biological conditions (ie, zebra mussels)	10/06/2011 - 10/14/2011	8		219,000		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	10/29/2011 - 10/31/2011	2		162,762		
Riverside.9	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	10/29/2011 - 10/31/2011	2		283,046		
Sherburne.3	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	10/01/2011 - 10/31/2011	31		7,770,181		
Scheduled Outages - Totals					114		17,849,767		
Total					296		42,542,144		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
(2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	8,515,301
Total Replacement Purchase MWh	1,283,148
Increased Cost per MWh	\$6.64

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	10/04/2011 - 10/31/2011	28		4,525,114		
Black.Dog.3	Steam	Extension	Other Safety Problems	10/04/2011 - 10/08/2011	4		163,955		
Black.Dog.3	Steam	Forced	Second Reheater Leaks	10/12/2011 - 10/13/2011	1		40,674		
Black.Dog.3	Steam	Extension	Debris in Circulating water from outside sources	10/31/2011 - 10/31/2011	1		46,406		
Black.Dog.4	Steam	Extension	Other Safety Problems	10/04/2011 - 10/10/2011	6		480,996		
Black.Dog.4	Steam	Extension	Debris in Circulating water from outside sources	10/31/2011 - 10/31/2011	1		93,595		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	10/07/2011 - 10/11/2011	4		38,479		
French.Is.1	RDF	Maintenance	Stacks	10/27/2011 - 10/31/2011	3		28,859		
French.Is.2	RDF	Maintenance	Stacks	10/20/2011 - 10/24/2011	3		29,081		
French.Is.4	Peaking	Maintenance	4000-6000-volt Transformers	10/17/2011 - 10/31/2011	14		5,416,263		
Inver.Hills.1G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/19/2011 - 10/21/2011	2		111,246		
Inver.Hills.2G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/13/2011 - 10/14/2011	1		58,139		
Inver.Hills.3G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/18/2011 - 10/20/2011	2		114,877		
Inver.Hills.4G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/17/2011 - 10/19/2011	2		109,006		
Inver.Hills.5G	Peaking	Maintenance	Gas Turbine - Exhaust System Vanes/Nozzles	10/10/2011 - 10/11/2011	1		52,648		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearings	10/01/2011 - 10/31/2011	31		575,901		
Monticello.1	Nuclear	Derate	Power Limited By Rod Pattern.	10/05/2011 - 10/06/2011	1		16,733		
Monticello.1	Nuclear	Forced	Safeguard Buses And Assoc. Equipment (transfrm,..)	10/21/2011 - 10/28/2011	6		1,626,970		
Prairie.Island.1	Nuclear	Derate	Heater Level Control	10/03/2011 - 10/04/2011	1		16,868		
Prairie.Island.2	Nuclear	Forced	Reactor Coolant/recirculating Pumps	10/04/2011 - 10/20/2011	15		3,556,958		
Wheaton.1G	Peaking	Forced	Other Dc Power Problems	10/04/2011 - 10/05/2011	1		60,829		
Wheaton.2G	Peaking	Forced	Programmable Logic Controller (PLC)	10/06/2011 - 10/31/2011	25		1,703,760		
Wheaton.3G	Peaking	Forced	Other Generator Controls And Metering Problems	10/11/2011 - 10/31/2011	20		1,201,464		
Wheaton.5	Peaking	Maintenance	General Gas Turbine Unit Inspection	10/13/2011 - 10/21/2011	8		471,279		
Wheaton.6	Peaking	Maintenance	General Gas Turbine Unit Inspection	10/26/2011 - 10/27/2011	1		57,740		
Forced Outages - Totals					182		20,597,930		
Allen.S.King.1	Steam	Scheduled	Boiler Tube Fireside Cleaning	10/23/2011 - 10/29/2011	5		1,450,764		
BD25.CC	Steam	Scheduled	Other Safety Problems	10/01/2011 - 10/04/2011	3		484,834		
Black.Dog.3	Steam	Scheduled	Other Safety Problems	10/01/2011 - 10/04/2011	3		122,023		
Black.Dog.3	Steam	Scheduled	Debris in Circulating water from outside sources	10/22/2011 - 10/31/2011	8		325,396		
Black.Dog.4	Steam	Scheduled	Other Safety Problems	10/01/2011 - 10/04/2011	3		235,811		
Black.Dog.4	Steam	Scheduled	Debris in Circulating water from outside sources	10/23/2011 - 10/31/2011	7		550,225		
Blue.Lake.7	Peaking	Scheduled	Gas Turbine - Gas Fuel System	10/01/2011 - 10/24/2011	23		2,579,439		
Blue.Lake.8	Peaking	Scheduled	Gas Turbine - Gas Fuel System	10/01/2011 - 10/10/2011	9		1,138,812		
Blue.Lake.8	Peaking	Scheduled	Gas Turbine - Gas Fuel System	10/13/2011 - 10/24/2011	10		1,265,346		
Prairie.Island.1	Nuclear	Scheduled	Circulating water biological conditions (ie, zebra mussels)	10/06/2011 - 10/14/2011	8		156,516		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	10/29/2011 - 10/31/2011	2		114,481		
Riverside.9	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	10/29/2011 - 10/31/2011	2		149,789		
Sherburne.3	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	10/01/2011 - 10/31/2011	31		9,894,166		
Scheduled Outages - Totals					114		18,467,602		
Total					296		39,065,532		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
(2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days
(3) Only costs for planned outage days within the specific forecast month (i.e. October 2011) are listed, the completion date of the outage may be into the following month or beyond.

Total Change in Energy Costs	2,730,369
Total Replacement Purchase MWh	1,322,602
Increased Cost per MWh	\$2.06

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Angus.Anson.2G	Peaking	Maintenance	4000-6000-volt Transformers	11/15/2011	11/16/2011	1		48	
Angus.Anson.2G	Peaking	Forced	Circuit Breakers	11/16/2011	11/18/2011	1	6,240		
Angus.Anson.3G	Peaking	Maintenance	Unit Auxiliaries Transformer	11/15/2011	11/17/2011	2	49		
BD25.CC	Steam	Extension	Other Safety Problems	11/01/2011	11/30/2011	30	2,154,784		
Black.Dog.3	Steam	Extension	Debris in Circulating water from outside sources	11/01/2011	11/03/2011	2	50,627		
Black.Dog.4	Steam	Extension	Debris in Circulating water from outside sources	11/01/2011	11/02/2011	1	123,926		
Blue.Lake.1	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	11/10/2011	11/11/2011	1	216		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	11/11/2011	11/17/2011	6	58		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearings	11/01/2011	11/30/2011	30	3,903		
Monticello.1	Nuclear	Forced	Turbine Trip Devices (including Instruments)	11/19/2011	11/28/2011	8	2,873,421		
Monticello.1	Nuclear	Forced	Turbine Trip Devices (including Instruments)	11/28/2011	11/30/2011	2	922,568		
Red.Wing.1	RDF	Forced	Lack Of Fuel (outside management control)	11/19/2011	11/24/2011	4	20,547		
Riverside.10	CC	Maintenance	Gen. Stator Windings, Bushings, And Terminals	11/01/2011	11/05/2011	4	197,679		
Sherburne.2	Steam	Derate	High Pressure Heater Tube Leaks	11/03/2011	11/11/2011	8	279,482		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	11/06/2011	11/18/2011	11	1,795,555		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	11/19/2011	11/30/2011	11	1,951,782		
Wheaton.1G	Peaking	Maintenance	Fire protection system instrumentation and control	11/18/2011	11/30/2011	12	37,031		
Wheaton.2G	Peaking	Forced	Programmable Logic Controller (PLC)	11/01/2011	11/17/2011	16	26,128		
Wheaton.3G	Peaking	Forced	Other Generator Controls And Metering Problems	11/01/2011	11/29/2011	28	59,575		
Forced Outages - Totals						178	10,503,619		
Angus.Anson.2G	Peaking	Scheduled	Gas Turbine Vibration	11/26/2011	11/30/2011	4	6,283		
Angus.Anson.3G	Peaking	Scheduled	Gas Turbine Vibration	11/17/2011	11/23/2011	6	55,842		
HighBridge.7	CC	Scheduled	Gas Turbine - Boroscope Inspection	11/04/2011	11/20/2011	15	769,315		
HighBridge.8	CC	Scheduled	Gas Turbine - Boroscope Inspection	11/04/2011	11/20/2011	15	769,029		
HighBridge.9	CC	Scheduled	Condenser Tube And Water Box Cleaning	11/04/2011	11/20/2011	15	885,873		
Riverside.10	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/10/2011	11/30/2011	20	1,001,194		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/01/2011	11/05/2011	4	254,151		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/05/2011	11/10/2011	4	189,028		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/10/2011	11/30/2011	20	1,278,869		
Riverside.9	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/01/2011	11/30/2011	30	1,383,685		
Sherburne.3	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	11/01/2011	11/06/2011	5	670,479		
Scheduled Outages - Totals						138	7,263,748		
Total						316	17,767,367		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	3,806,273
Total Replacement Purchase MWh	677,603
Increased Cost per MWh	\$5.62

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Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Angus.Anson.2G	Peaking	Maintenance	4000-6000-volt Transformers	11/15/2011	11/16/2011	1	147,310		
Angus.Anson.2G	Peaking	Forced	Circuit Breakers	11/16/2011	11/18/2011	1	147,310		
Angus.Anson.3G	Peaking	Maintenance	Unit Auxiliaries Transformer	11/15/2011	11/17/2011	2	295,778		
BD25.CC	Steam	Extension	Other Safety Problems	11/01/2011	11/30/2011	30	5,084,748		
Black.Dog.3	Steam	Extension	Debris in Circulating water from outside sources	11/01/2011	11/03/2011	2	81,719		
Black.Dog.4	Steam	Extension	Debris in Circulating water from outside sources	11/01/2011	11/02/2011	1	78,976		
Blue.Lake.1	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	11/10/2011	11/11/2011	1	243,761		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	11/11/2011	11/17/2011	6	58,031		
Key.City.1	Peaking	Forced	Gas Turbine - Load Shaft And Bearings	11/01/2011	11/30/2011	30	691,927		
Monticello.1	Nuclear	Forced	Turbine Trip Devices (including Instruments)	11/19/2011	11/28/2011	8	1,831,273		
Monticello.1	Nuclear	Forced	Turbine Trip Devices (including Instruments)	11/28/2011	11/30/2011	2	777,116		
Red.Wing.1	RDF	Forced	Lack Of Fuel (outside management control)	11/19/2011	11/24/2011	4	16,443		
Riverside.10	CC	Maintenance	Gen. Stator Windings, Bushings, And Terminals	11/01/2011	11/05/2011	4	307,238		
Sherburne.2	Steam	Derate	High Pressure Heater Tube Leaks	11/03/2011	11/11/2011	8	276,962		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	11/06/2011	11/18/2011	11	3,592,618		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	11/19/2011	11/30/2011	11	3,592,618		
Wheaton.1G	Peaking	Maintenance	Fire protection system instrumentation and control	11/18/2011	11/30/2011	12	815,283		
Wheaton.2G	Peaking	Forced	Programmable Logic Controller (PLC)	11/01/2011	11/17/2011	16	1,108,977		
Wheaton.3G	Peaking	Forced	Other Generator Controls And Metering Problems	11/01/2011	11/29/2011	28	1,897,110		
Forced Outages - Totals						178	21,045,198		
Angus.Anson.2G	Peaking	Scheduled	Gas Turbine Vibration	11/26/2011	11/30/2011	4	589,239		
Angus.Anson.3G	Peaking	Scheduled	Gas Turbine Vibration	11/17/2011	11/23/2011	6	887,334		
HighBridge.7	CC	Scheduled	Gas Turbine - Boroscope Inspection	11/04/2011	11/20/2011	15	1,394,118		
HighBridge.8	CC	Scheduled	Gas Turbine - Boroscope Inspection	11/04/2011	11/20/2011	15	1,394,118		
HighBridge.9	CC	Scheduled	Condenser Tube And Water Box Cleaning	11/04/2011	11/20/2011	15	1,605,348		
Riverside.10	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/10/2011	11/30/2011	20	1,536,192		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/01/2011	11/05/2011	4	395,021		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/05/2011	11/10/2011	4	197,510		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/10/2011	11/30/2011	20	1,975,104		
Riverside.9	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	11/01/2011	11/30/2011	30	2,304,288		
Sherburne.3	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	11/01/2011	11/06/2011	5	1,633,008		
Scheduled Outages - Totals						138	13,911,280		
Total						316	34,956,478		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days
- (3) Only costs for planned outage days within the specific forecast month (i.e. November 2011) are listed, the completion date of the outage may be into the following month or beyond.

Total Change in Energy Costs	1,132,679
Total Replacement Purchase MWh	1,310,688
Increased Cost per MWh	\$0.86

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Forced	High Pressure Heater Tube Leaks	12/09/2011	12/12/2011	2		724,121		
BD25.CC	Steam	Extension	Other Safety Problems	12/01/2011	12/31/2011	30		5,176,559		
Black.Dog.4	Steam	Forced	Second Superheater Leaks	12/05/2011	12/09/2011	4		521,645		
Blue.Lake.1	Peaking	Maintenance	Gas Turbine Liquid Fuel Oil Transfer/forward Pump	12/08/2011	12/12/2011	3		387,728		
Blue.Lake.2	Peaking	Maintenance	Gas Turbine Liquid Fuel Oil Transfer/forward Pump	12/08/2011	12/12/2011	3		387,728		
Blue.Lake.2	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	12/27/2011	12/31/2011	4		465,437		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	12/12/2011	12/14/2011	2		273,510		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	12/27/2011	12/28/2011	1		122,784		
Blue.Lake.4	Peaking	Maintenance	Other Controls And Instrumentation Problems	12/14/2011	12/19/2011	5		751,617		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	12/02/2011	12/06/2011	4		34,603		
Inver.Hills.1G	Peaking	Maintenance	Protection Devices	12/05/2011	12/06/2011	1		54,702		
Inver.Hills.2G	Peaking	Maintenance	Protection Devices	12/05/2011	12/06/2011	1		31,357		
Inver.Hills.3G	Peaking	Maintenance	Protection Devices	12/07/2011	12/09/2011	2		60,964		
Inver.Hills.4G	Peaking	Maintenance	Protection Devices	12/07/2011	12/09/2011	2		69,431		
Inver.Hills.4G	Peaking	Forced	Inverters	12/09/2011	12/12/2011	2		55,872		
Inver.Hills.5G	Peaking	Maintenance	Protection Devices	12/12/2011	12/13/2011	1		34,746		
Inver.Hills.6G	Peaking	Maintenance	Protection Devices	12/12/2011	12/13/2011	1		29,702		
Key.City.1	Peaking	Forced	Generator Rotor Windings	12/01/2011	12/31/2011	30		100,735		
Monticello.1	Nuclear	Forced	Turbine Trip Devices (including Instruments)	12/01/2011	12/10/2011	9		482,533		
Riverside.7	CC	Extension	Gen. Stator Windings, Bushings, And Terminals	12/06/2011	12/08/2011	1		225,765		
Riverside.9	CC	Extension	Gen. Stator Windings, Bushings, And Terminals	12/06/2011	12/08/2011	1		89,741		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	12/01/2011	12/31/2011	30		7,701,441		
Wheaton.1G	Peaking	Forced	Fire protection system instrumentation and control	12/02/2011	12/15/2011	12		222,549		
Wheaton.4G	Peaking	Maintenance	Fire protection system instrumentation and control	12/05/2011	12/21/2011	16		264,079		
Wheaton.4G	Peaking	Forced	Circuit Breakers	12/21/2011	12/27/2011	5		46,991		
Forced Outages - Totals						172		18,315,744		
Prairie.Island.1	Nuclear	Scheduled	Turbine Control Valve Testing	12/02/2011	12/03/2011	1		398,849		
Riverside.10	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	12/01/2011	12/13/2011	12		1,576,450		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	12/01/2011	12/06/2011	5		581,696		
Riverside.9	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	12/01/2011	12/06/2011	5		688,525		
Scheduled Outages - Totals						23		3,245,520		
Total						195		21,561,264		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
(2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	3,655,396
Total Replacement Purchase MWh	683,518
Increased Cost per MWh	\$5.35

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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Forced	High Pressure Heater Tube Leaks	12/09/2011	12/12/2011	2		741,330		
BD25.CC	Steam	Extension	Other Safety Problems	12/01/2011	12/31/2011	30		5,176,559		
Black.Dog.4	Steam	Forced	Second Superheater Leaks	12/05/2011	12/09/2011	4		521,645		
Blue.Lake.1	Peaking	Maintenance	Gas Turbine Liquid Fuel Oil Transfer/forward Pump	12/08/2011	12/12/2011	3		387,728		
Blue.Lake.2	Peaking	Maintenance	Gas Turbine Liquid Fuel Oil Transfer/forward Pump	12/08/2011	12/12/2011	3		387,728		
Blue.Lake.2	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	12/27/2011	12/31/2011	4		465,437		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	12/12/2011	12/14/2011	2		273,510		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	12/27/2011	12/28/2011	1		122,784		
Blue.Lake.4	Peaking	Maintenance	Other Controls And Instrumentation Problems	12/14/2011	12/19/2011	5		751,617		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	12/02/2011	12/06/2011	4		34,603		
Inver.Hills.1G	Peaking	Maintenance	Protection Devices	12/05/2011	12/06/2011	1		54,702		
Inver.Hills.2G	Peaking	Maintenance	Protection Devices	12/05/2011	12/06/2011	1		31,357		
Inver.Hills.3G	Peaking	Maintenance	Protection Devices	12/07/2011	12/09/2011	2		60,964		
Inver.Hills.4G	Peaking	Maintenance	Protection Devices	12/07/2011	12/09/2011	2		69,431		
Inver.Hills.4G	Peaking	Forced	Inverters	12/09/2011	12/12/2011	2		55,872		
Inver.Hills.5G	Peaking	Maintenance	Protection Devices	12/12/2011	12/13/2011	1		34,746		
Inver.Hills.6G	Peaking	Maintenance	Protection Devices	12/12/2011	12/13/2011	1		29,702		
Key.City.1	Peaking	Forced	Generator Rotor Windings	12/01/2011	12/31/2011	30		100,735		
Monticello.1	Nuclear	Forced	Turbine Trip Devices (including Instruments)	12/01/2011	12/10/2011	9		482,533		
Riverside.7	CC	Extension	Gen. Stator Windings, Bushings, And Terminals	12/06/2011	12/08/2011	1		225,765		
Riverside.9	CC	Extension	Gen. Stator Windings, Bushings, And Terminals	12/06/2011	12/08/2011	1		89,741		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	12/01/2011	12/31/2011	30		8,659,515		
Wheaton.1G	Peaking	Forced	Fire protection system instrumentation and control	12/02/2011	12/15/2011	12		222,549		
Wheaton.4G	Peaking	Maintenance	Fire protection system instrumentation and control	12/05/2011	12/21/2011	16		264,079		
Wheaton.4G	Peaking	Forced	Circuit Breakers	12/21/2011	12/27/2011	5		46,991		
Forced Outages - Totals						172		19,291,623		
Prairie.Island.1	Nuclear	Scheduled	Turbine Control Valve Testing	12/02/2011	12/03/2011	1		398,849		
Riverside.10	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	12/01/2011	12/13/2011	12		1,576,450		
Riverside.7	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	12/01/2011	12/06/2011	5		581,696		
Riverside.9	CC	Scheduled	Gen. Stator Windings, Bushings, And Terminals	12/01/2011	12/06/2011	5		688,525		
Scheduled Outages - Totals						23		3,245,520		
Total						195		22,537,143		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
(2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	4,631,275
Total Replacement Purchase MWh	683,518
Increased Cost per MWh	\$6.78

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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	01/01/2012 - 01/31/2012	30		4,157,592		
Black.Dog.3	Steam	Forced	First Reheater Leaks	01/03/2012 - 01/10/2012	7		229,270		
Blue.Lake.2	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	01/01/2012 - 01/10/2012	9		938,380		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	01/09/2012 - 01/13/2012	3		378,767		
French.Is.2	RDF	Maintenance	Bed Agglomeration (Ibc Only)	01/06/2012 - 01/09/2012	3		28,412		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	01/13/2012 - 01/17/2012	3		28,836		
French.Is.4	Peaking	Maintenance	Generator Voltage Control	01/03/2012 - 01/13/2012	10		1,178,101		
French.Is.4	Peaking	Extension	Generator Voltage Control	01/13/2012 - 01/17/2012	4		460,055		
Key.City.1	Peaking	Forced	Generator Rotor Windings	01/01/2012 - 01/31/2012	31		83,386		
Red.Wing.2	RDF	Forced	Induced Draft Fan Motors - Variable Speed	01/01/2012 - 01/04/2012	3		9,472		
Riverside.7	CC	Derate	Gas Turbine - Gas Fuel System	01/09/2012 - 01/10/2012	1		109,485		
Riverside.9	CC	Maintenance	Gas Turbine - Gas Fuel System	01/09/2012 - 01/10/2012	1		121,134		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	01/01/2012 - 01/31/2012	30		6,299,086		
Wheaton.2G	Peaking	Maintenance	Fire protection system instrumentation and control	01/09/2012 - 01/17/2012	8		69,344		
Wheaton.3G	Peaking	Maintenance	Fire protection system instrumentation and control	01/03/2012 - 01/06/2012	3		31,132		
Wheaton.6	Peaking	Maintenance	Fire protection system instrumentation and control	01/23/2012 - 01/31/2012	8		172,252		
Forced Outages - Totals						154	14,294,704		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	01/09/2012 - 01/31/2012	22		232,776		
Key.City.3	Peaking	Scheduled	Powerhouse Switchyard (non-generating unit equip)	01/14/2012 - 01/31/2012	17		47,880		
Willmarth.1	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	01/13/2012 - 01/31/2012	18		650,782		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	01/13/2012 - 01/31/2012	18		66,902		
Scheduled Outages - Totals						75	998,340		
Total						229	15,293,044		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	436,992
Total Replacement Purchase MWh	547,157
Increased Cost per MWh	\$0.80

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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	01/01/2012 - 01/31/2012	31		4,157,592		
Black.Dog.3	Steam	Forced	First Reheater Leaks	01/03/2012 - 01/10/2012	7		115,916		
Blue.Lake.2	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	01/01/2012 - 01/10/2012	9		938,380		
Blue.Lake.3	Peaking	Maintenance	Gas Turbine - Fuel Piping And Valves	01/09/2012 - 01/13/2012	3		378,767		
French.Is.2	RDF	Maintenance	Bed Agglomeration (Ibc Only)	01/06/2012 - 01/09/2012	3		28,412		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	01/13/2012 - 01/17/2012	3		28,836		
French.Is.4	Peaking	Maintenance	Generator Voltage Control	01/03/2012 - 01/13/2012	10		1,178,101		
French.Is.4	Peaking	Extension	Generator Voltage Control	01/13/2012 - 01/17/2012	4		460,055		
Key.City.1	Peaking	Forced	Generator Rotor Windings	01/01/2012 - 01/31/2012	31		83,386		
Red.Wing.2	RDF	Forced	Induced Draft Fan Motors - Variable Speed	01/01/2012 - 01/04/2012	3		9,472		
Riverside.7	CC	Derate	Gas Turbine - Gas Fuel System	01/09/2012 - 01/10/2012	1		109,485		
Riverside.9	CC	Maintenance	Gas Turbine - Gas Fuel System	01/09/2012 - 01/10/2012	1		121,134		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	01/01/2012 - 01/31/2012	31		6,760,547		
Wheaton.2G	Peaking	Maintenance	Fire protection system instrumentation and control	01/09/2012 - 01/17/2012	8		69,344		
Wheaton.3G	Peaking	Maintenance	Fire protection system instrumentation and control	01/03/2012 - 01/06/2012	3		31,132		
Wheaton.6	Peaking	Maintenance	Fire protection system instrumentation and control	01/23/2012 - 01/31/2012	8		172,252		
Forced Outages - Totals						156	14,642,811		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	01/09/2012 - 01/31/2012	22		232,776		
Key.City.3	Peaking	Scheduled	Powerhouse Switchyard (non-generating unit equip)	01/14/2012 - 01/31/2012	17		47,880		
Willmarth.1	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	01/13/2012 - 01/31/2012	18		650,782		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	01/13/2012 - 01/31/2012	18		66,902		
Scheduled Outages - Totals						75	998,340		
Total						231	15,641,151		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	901,452
Total Replacement Purchase MWh	541,459
Increased Cost per MWh	\$1.66

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Northern States Power, A Minnesota Corporation
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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	02/01/2012 - 02/29/2012	29		3,869,282		
Black.Dog.4	Steam	Forced	Second Superheater Leaks	02/01/2012 - 02/03/2012	2		188,559		
Black.Dog.4	Steam	Forced	Turbine Main Stop Valves	02/04/2012 - 02/24/2012	19		1,088,431		
Blue.Lake.4	Peaking	Maintenance	Gas Turbine - Lube Oil Pumps	02/27/2012 - 02/29/2012	2		385,144		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	02/03/2012 - 02/08/2012	4		36,249		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	02/17/2012 - 02/22/2012	4		36,938		
HighBridge.7	CC	Forced	Other HP Steam valves (including vent and drain...	02/02/2012 - 02/06/2012	4		466,334		
HighBridge.8	CC	Forced	HP Superheater	02/02/2012 - 02/09/2012	7		756,413		
HighBridge.9	CC	Forced	HP Superheater	02/02/2012 - 02/06/2012	4		497,987		
HighBridge.9	CC	Derate	HP Superheater	02/06/2012 - 02/09/2012	3		164,174		
Key.City.1	Peaking	Forced	Generator Rotor Windings	02/01/2012 - 02/29/2012	29		71,193		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	02/01/2012 - 02/29/2012	29		6,067,854		
Wheaton.2G	Peaking	Forced	Other PLC problems	02/08/2012 - 02/09/2012	1		21,697		
Wheaton.5	Peaking	Maintenance	Fire protection system instrumentation and control	02/06/2012 - 02/17/2012	11		262,284		
Wheaton.6	Peaking	Maintenance	Fire protection system instrumentation and control	02/01/2012 - 02/03/2012	2		72,862		
Wheaton.6	Peaking	Maintenance	Service Air Compressors	02/09/2012 - 02/10/2012	1		28,760		
Forced Outages - Totals						151	14,014,161		
Blue.Lake.1	Peaking	Scheduled	Gas Turbine - Hydraulic Oil System	02/23/2012 - 02/29/2012	6		706,408		
Blue.Lake.2	Peaking	Scheduled	Gas Turbine - Hydraulic Oil System	02/09/2012 - 02/17/2012	8		872,058		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	02/01/2012 - 02/29/2012	29		286,811		
Key.City.3	Peaking	Scheduled	Powerhouse Switchyard (non-generating unit equip)	02/01/2012 - 02/27/2012	26		65,021		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	02/13/2012 - 02/19/2012	6		302,139		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	02/19/2012 - 02/21/2012	2		196,398		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	02/22/2012 - 02/29/2012	7		2,275,448		
Red.Wing.1	RDF	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	02/12/2012 - 02/29/2012	17		58,434		
Red.Wing.2	RDF	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	02/15/2012 - 02/29/2012	14		42,484		
Willmarth.1	Peaking	Scheduled	Switchyard circuit breakers - external	02/03/2012 - 02/06/2012	3		12,033		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	02/01/2012 - 02/06/2012	5		22,817		
Scheduled Outages - Totals						123	4,840,051		
Total						274	18,854,212		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	2,709,105
Total Replacement Purchase MWh	782,698
Increased Cost per MWh	\$3.46

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

Northern States Power, A Minnesota Corporation
 Unit Outage Information - ACTUAL VS FORECAST
 February 2012

Attachment 1
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ACTUAL

REVISED (4-10-2012)

ORIGINAL

TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	02/01/2012 - 02/29/2012	29		3,869,282		
Black.Dog.4	Steam	Forced	Second Superheater Leaks	02/01/2012 - 02/03/2012	2		194,672		
Black.Dog.4	Steam	Forced	Turbine Main Stop Valves	02/04/2012 - 02/24/2012	19		1,185,783		
Blue.Lake.4	Peaking	Maintenance	Gas Turbine - Lube Oil Pumps	02/27/2012 - 02/29/2012	2		385,144		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	02/03/2012 - 02/08/2012	4		36,249		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	02/17/2012 - 02/22/2012	4		36,938		
HighBridge.7	CC	Forced	Other HP Steam valves (including vent and drain...	02/02/2012 - 02/06/2012	4		466,334		
HighBridge.8	CC	Forced	HP Superheater	02/02/2012 - 02/09/2012	7		756,413		
HighBridge.9	CC	Forced	HP Superheater	02/02/2012 - 02/06/2012	4		497,987		
HighBridge.9	CC	Derate	HP Superheater	02/06/2012 - 02/09/2012	3		164,174		
Key.City.1	Peaking	Forced	Generator Rotor Windings	02/01/2012 - 02/29/2012	29		71,193		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	02/01/2012 - 02/29/2012	29		6,485,264		
Wheaton.2G	Peaking	Forced	Other PLC problems	02/08/2012 - 02/09/2012	1		21,697		
Wheaton.5	Peaking	Maintenance	Fire protection system instrumentation and control	02/06/2012 - 02/17/2012	11		262,284		
Wheaton.6	Peaking	Maintenance	Fire protection system instrumentation and control	02/01/2012 - 02/03/2012	2		72,862		
Wheaton.6	Peaking	Maintenance	Service Air Compressors	02/09/2012 - 02/10/2012	1		28,760		
Forced Outages - Totals						151	14,535,036		
Blue.Lake.1	Peaking	Scheduled	Gas Turbine - Hydraulic Oil System	02/23/2012 - 02/29/2012	6		706,408		
Blue.Lake.2	Peaking	Scheduled	Gas Turbine - Hydraulic Oil System	02/09/2012 - 02/17/2012	8		872,058		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	02/01/2012 - 02/29/2012	29		286,811		
Key.City.3	Peaking	Scheduled	Powerhouse Switchyard (non-generating unit equip)	02/01/2012 - 02/27/2012	26		65,021		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	02/13/2012 - 02/19/2012	6		304,904		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	02/19/2012 - 02/21/2012	2		196,398		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	02/22/2012 - 02/29/2012	7		2,280,701		
Red.Wing.1	RDF	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	02/12/2012 - 02/29/2012	17		58,434		
Red.Wing.2	RDF	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	02/15/2012 - 02/29/2012	14		42,484		
Willmarth.1	Peaking	Scheduled	Switchyard circuit breakers - external	02/03/2012 - 02/06/2012	3		12,033		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	02/01/2012 - 02/06/2012	5		22,817		
Scheduled Outages - Totals						123	4,848,069		
Total						274	19,383,105		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	3,237,998
Total Replacement Purchase MWh	782,698
Increased Cost per MWh	\$4.14

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

Northern States Power, A Minnesota Corporation
 Unit Outage Information - ACTUAL VS FORECAST
 March 2012

Attachment 1
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ACTUAL

REVISED

TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Forced	First Reheater Leaks	03/30/2012	03/31/2012	1		242,869		
BD25.CC	Steam	Extension	Other Safety Problems	03/01/2012	03/31/2012	31		3,974,630		
Black.Dog.3	Steam	Forced	DCS - data highway	03/12/2012	03/17/2012	4		129,867		
Black.Dog.3	Steam	Forced	Other Boiler Instrumentation and Control Problems	03/17/2012	03/18/2012	1		26,350		
Black.Dog.4	Steam	Maintenance	Circulating Water Pumps	03/10/2012	03/11/2012	1		52,928		
Black.Dog.4	Steam	Forced	DCS - data highway	03/12/2012	03/20/2012	7		301,459		
Blue.Lake.4	Peaking	Maintenance	Gas Turbine - Lube Oil Pumps	03/01/2012	03/21/2012	20		3,223,716		
Blue.Lake.7	Peaking	Maintenance	Gas Turbine - Gas Fuel System	03/01/2012	03/09/2012	8		779,504		
Blue.Lake.7	Peaking	Extension	Gas Turbine - Gas Fuel System	03/09/2012	03/19/2012	9		521,938		
French.Is.2	RDF	Maintenance	Refractory (fbc Only)	03/02/2012	03/09/2012	6		55,017		
Inver.Hills.4G	Peaking	Forced	Circuit Breakers	03/20/2012	03/27/2012	7		112,358		
Riverside.10	CC	Derate	Circulating Water Pump Motors	03/14/2012	03/28/2012	14		128,879		
Riverside.7	CC	Derate	Circulating Water Pump Motors	03/14/2012	03/28/2012	14		115,932		
Riverside.9	CC	Forced	Unit Auxiliaries Transformer	03/12/2012	03/14/2012	2		170,534		
Riverside.9	CC	Derate	Circulating Water Pump Motors	03/14/2012	03/28/2012	14		128,519		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	03/01/2012	03/31/2012	31		5,705,721		
Forced Outages - Totals						170		15,670,221		
Black.Dog.4	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	03/31/2012	03/31/2012	1		35,612		
Blue.Lake.1	Peaking	Scheduled	Gas Turbine - Hydraulic Oil System	03/01/2012	03/05/2012	4		475,983		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	03/01/2012	03/31/2012	31		436,545		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	03/01/2012	03/31/2012	31		7,918,039		
Red.Wing.1	RDF	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	03/01/2012	03/04/2012	3		14,821		
Sherburne.1	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	03/01/2012	03/31/2012	30		7,310,109		
Scheduled Outages - Totals						100		16,191,109		
Total						270		31,861,330		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
 (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	5,908,814
Total Replacement Purchase MWh	1,391,733
Increased Cost per MWh	\$4.25

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

Northern States Power, A Minnesota Corporation
 Unit Outage Information - ACTUAL VS FORECAST
 March 2012

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ACTUAL

ORIGINAL

TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Forced	First Reheater Leaks	03/30/2012	03/31/2012	1		242,869		
BD25.CC	Steam	Extension	Other Safety Problems	03/01/2012	03/31/2012	31		3,974,630		
Black.Dog.3	Steam	Forced	DCS - data highway	03/12/2012	03/17/2012	4		144,350		
Black.Dog.3	Steam	Forced	Other Boiler Instrumentation and Control Problems	03/17/2012	03/18/2012	1		26,697		
Black.Dog.4	Steam	Maintenance	Circulating Water Pumps	03/10/2012	03/11/2012	1		55,796		
Black.Dog.4	Steam	Forced	DCS - data highway	03/12/2012	03/20/2012	7		324,649		
Blue.Lake.4	Peaking	Maintenance	Gas Turbine - Lube Oil Pumps	03/01/2012	03/21/2012	20		3,223,716		
Blue.Lake.7	Peaking	Maintenance	Gas Turbine - Gas Fuel System	03/01/2012	03/09/2012	8		779,504		
Blue.Lake.7	Peaking	Extension	Gas Turbine - Gas Fuel System	03/09/2012	03/19/2012	9		521,938		
French.Is.2	RDF	Maintenance	Refractory (fbc Only)	03/02/2012	03/09/2012	6		55,017		
Inver.Hills.4G	Peaking	Forced	Circuit Breakers	03/20/2012	03/27/2012	7		112,358		
Riverside.10	CC	Derate	Circulating Water Pump Motors	03/14/2012	03/28/2012	14		128,879		
Riverside.7	CC	Derate	Circulating Water Pump Motors	03/14/2012	03/28/2012	14		115,932		
Riverside.9	CC	Forced	Unit Auxiliaries Transformer	03/12/2012	03/14/2012	2		170,534		
Riverside.9	CC	Derate	Circulating Water Pump Motors	03/14/2012	03/28/2012	14		128,519		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	03/01/2012	03/31/2012	31		6,042,901		
Forced Outages - Totals						170		16,048,289		
Black.Dog.4	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	03/31/2012	03/31/2012	1		38,071		
Blue.Lake.1	Peaking	Scheduled	Gas Turbine - Hydraulic Oil System	03/01/2012	03/05/2012	4		475,983		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	03/01/2012	03/31/2012	31		436,545		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	03/01/2012	03/31/2012	31		8,102,180		
Red.Wing.1	RDF	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	03/01/2012	03/04/2012	3		14,821		
Sherburne.1	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	03/01/2012	03/31/2012	30		7,859,767		
Scheduled Outages - Totals						100		16,927,367		
Total						270		32,975,656		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
 (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	7,023,140
Total Replacement Purchase MWh	1,391,733
Increased Cost per MWh	\$5.05

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

Northern States Power, A Minnesota Corporation
 Unit Outage Information - ACTUAL VS FORECAST
 April 2012

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ACTUAL

REVISED

TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Forced	First Reheater Leaks	04/01/2012	04/02/2012	1		288,626		
Angus.Anson.4	Peaking	Maintenance	Gas Turbine - Boroscope Inspection	04/02/2012	04/05/2012	3		262,529		
BD25.CC	Steam	Extension	Other Safety Problems	04/01/2012	04/30/2012	30		3,661,513		
Black.Dog.3	Steam	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	04/21/2012	04/26/2012	4		164,722		
Black.Dog.4	Steam	Forced	Cold reheat steam piping up to boiler	04/09/2012	04/10/2012	1		89,589		
Blue.Lake.7	Peaking	Maintenance	Gas Turbine - Boroscope Inspection	04/22/2012	04/28/2012	6		500,905		
Blue.Lake.8	Peaking	Maintenance	Gas Turbine - Boroscope Inspection	04/22/2012	04/28/2012	6		466,142		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	04/06/2012	04/10/2012	3		29,038		
French.Is.1	RDF	Forced	Turbine - Miscellaneous Turbine Piping	04/20/2012	04/23/2012	3		28,374		
French.Is.2	RDF	Maintenance	Circulating Water Pumps	04/27/2012	04/30/2012	3		32,595		
Inver.Hills.1G	Peaking	Forced	Gas Turbine - Ignition System	04/03/2012	04/05/2012	2		14,584		
Inver.Hills.3G	Peaking	Forced	Other Controls And Instrumentation Problems	04/03/2012	04/04/2012	1		6,962		
Riverside.7	CC	Derate	Exciter transformer	04/10/2012	04/11/2012	1		54,219		
Riverside.9	CC	Forced	Exciter transformer	04/10/2012	04/11/2012	1		105,529		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	04/01/2012	04/30/2012	30		6,140,351		
Wheaton.1G	Peaking	Forced	Fire protection system instrumentation and control	04/24/2012	04/26/2012	2		29,316		
Wheaton.2G	Peaking	Forced	Gas Turbine - Cooling Water System	04/25/2012	04/26/2012	1		9,464		
Forced Outages - Totals						98		11,884,458		
Black.Dog.4	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	04/01/2012	04/06/2012	5		296,451		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	04/01/2012	04/23/2012	22		181,044		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	04/01/2012	04/30/2012	30		7,487,688		
Sherburne.1	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	04/01/2012	04/30/2012	30		8,082,709		
Scheduled Outages - Totals						87		16,047,892		
Total						185		27,932,350		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
 (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	7,143,540
Total Replacement Purchase MWh	1,416,682
Increased Cost per MWh	\$5.04

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Northern States Power, A Minnesota Corporation
 Unit Outage Information - ACTUAL VS FORECAST
 April 2012

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ACTUAL

ORIGINAL

TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date		Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Forced	First Reheater Leaks	04/01/2012	04/02/2012	1		357,515		
Angus.Anson.4	Peaking	Maintenance	Gas Turbine - Boroscope Inspection	04/02/2012	04/05/2012	3		261,335		
BD25.CC	Steam	Extension	Other Safety Problems	04/01/2012	04/30/2012	30		3,601,227		
Black.Dog.3	Steam	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	04/21/2012	04/26/2012	4		187,505		
Black.Dog.4	Steam	Forced	Cold reheat steam piping up to boiler	04/09/2012	04/10/2012	1		89,819		
Blue.Lake.7	Peaking	Maintenance	Gas Turbine - Boroscope Inspection	04/22/2012	04/28/2012	6		481,966		
Blue.Lake.8	Peaking	Maintenance	Gas Turbine - Boroscope Inspection	04/22/2012	04/28/2012	6		447,448		
French.Is.1	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	04/06/2012	04/10/2012	3		28,995		
French.Is.1	RDF	Forced	Turbine - Miscellaneous Turbine Piping	04/20/2012	04/23/2012	3		28,332		
French.Is.2	RDF	Maintenance	Circulating Water Pumps	04/27/2012	04/30/2012	3		32,601		
Inver.Hills.1G	Peaking	Forced	Gas Turbine - Ignition System	04/03/2012	04/05/2012	2		11,416		
Inver.Hills.3G	Peaking	Forced	Other Controls And Instrumentation Problems	04/03/2012	04/04/2012	1		5,989		
Riverside.7	CC	Derate	Exciter transformer	04/10/2012	04/11/2012	1		54,219		
Riverside.9	CC	Forced	Exciter transformer	04/10/2012	04/11/2012	1		105,529		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	04/01/2012	04/30/2012	30		7,015,263		
Wheaton.1G	Peaking	Forced	Fire protection system instrumentation and control	04/24/2012	04/26/2012	2		27,051		
Wheaton.2G	Peaking	Forced	Gas Turbine - Cooling Water System	04/25/2012	04/26/2012	1		8,592		
Forced Outages - Totals						98		12,744,802		
Black.Dog.4	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	04/01/2012	04/06/2012	5		321,255		
Inver.Hills.6G	Peaking	Scheduled	Major Gas Turbine Overhaul	04/01/2012	04/23/2012	22		148,841		
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	04/01/2012	04/30/2012	30		7,669,748		
Sherburne.1	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	04/01/2012	04/30/2012	30		9,119,815		
Scheduled Outages - Totals						87		17,259,659		
Total						185		30,004,461		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
 (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	8,496,422
Total Replacement Purchase MWh	1,416,682
Increased Cost per MWh	\$6.00

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

Northern States Power, A Minnesota Corporation
Unit Outage Information - ACTUAL VS FORECAST
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ACTUAL					REVISED				
TRADE SECRET DATA BEGINS...									
Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	05/01/2012 - 05/31/2012	31	4,956,494			
French.Is.1	RDF	Maintenance	Service Water Piping	05/25/2012 - 05/31/2012	5	38,761			
French.Is.2	RDF	Maintenance	Circulating Water Pumps	05/01/2012 - 05/17/2012	16	109,798			
French.Is.4	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	05/18/2012 - 05/22/2012	3	22,042			
French.Is.4	Peaking	Forced	Gas Turbine Compressor - High Pressure Bearings	05/09/2012 - 05/17/2012	8	910,447			
HighBridge.7	CC	Extension	Major Gas Turbine Overhaul	05/27/2012 - 05/31/2012	3	338,675			
HighBridge.9	CC	Extension	Major Gas Turbine Overhaul	05/27/2012 - 05/31/2012	3	201,646			
Inver.Hills.1G	Peaking	Maintenance	Gas Turbine - Lube Oil System - General	05/15/2012 - 05/17/2012	2	53,708			
Inver.Hills.1G	Peaking	Forced	Generator Output Breaker	05/18/2012 - 05/21/2012	2	81,496			
Sherburne.2	Steam	Derate	High Pressure Heater Tube Leaks	05/14/2012 - 05/17/2012	3	151,007			
Sherburne.3	Steam	Derate	Condensate Makeup And Return (inc. Storage Tanks)	05/27/2012 - 05/31/2012	4	1,248,192			
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	05/01/2012 - 05/31/2012	31	9,281,594			
Wheaton.1G	Peaking	Forced	Fire protection system instrumentation and control	05/01/2012 - 05/11/2012	10	105,680			
Wheaton.3G	Peaking	Maintenance	Gas Turbine - Fire Detection And Extinguishing Sys	05/17/2012 - 05/18/2012	1	15,005			
Wheaton.4G	Peaking	Maintenance	Gas Turbine - Fire Detection And Extinguishing Sys	05/17/2012 - 05/18/2012	1	21,255			
Forced Outages - Totals					123	17,535,810			
Allen.S.King.1	Steam	Scheduled	Other Tube Slagging Or Fouling	05/04/2012 - 05/31/2012	27	8,140,189			
Black.Dog.3	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	05/11/2012 - 05/31/2012	20	969,813			
HighBridge.7	CC	Scheduled	Major Gas Turbine Overhaul	05/05/2012 - 05/23/2012	18	1,714,414			
HighBridge.7	CC	Scheduled	Major Gas Turbine Overhaul	05/23/2012 - 05/24/2012	1	144,897			
HighBridge.7	CC	Scheduled	Major Gas Turbine Overhaul	05/25/2012 - 05/27/2012	1	159,754			
HighBridge.8	CC	Scheduled	Major Gas Turbine Overhaul	05/05/2012 - 05/20/2012	15	1,412,943			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/05/2012 - 05/20/2012	15	1,588,548			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/21/2012 - 05/23/2012	1	114,787			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/23/2012 - 05/24/2012	1	83,799			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/25/2012 - 05/27/2012	1	95,430			
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	05/01/2012 - 05/29/2012	28	9,119,721			
Prairie.Island.2	Nuclear	Scheduled	Fuel Preconditioning	05/29/2012 - 05/31/2012	2	665,335			
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	05/01/2012 - 05/02/2012	1	161,880			
Sherburne.1	Steam	Scheduled	Main Steam Relief/safety Valves	05/02/2012 - 05/04/2012	1	513,538			
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	05/04/2012 - 05/30/2012	25	2,333,708			
Sherburne.1	Steam	Scheduled	Chemical Cleaning/steam Blows	05/30/2012 - 05/31/2012	1	836,675			
Sherburne.2	Steam	Scheduled	Miscellaneous Regulatory	05/17/2012 - 05/24/2012	6	3,349,792			
Scheduled Outages - Totals					164	31,405,223			
Total					287	48,941,033			

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
(2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	18,910,204
Total Replacement Purchase MWh	1,825,378
Increased Cost per MWh	\$10.36

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Northern States Power, A Minnesota Corporation
Unit Outage Information - ACTUAL VS FORECAST
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ACTUAL					ORIGINAL				
TRADE SECRET DATA BEGINS...									
Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWh	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	05/01/2012 - 05/31/2012	31	4,956,494			
French.Is.1	RDF	Maintenance	Service Water Piping	05/25/2012 - 05/31/2012	5	38,761			
French.Is.2	RDF	Maintenance	Circulating Water Pumps	05/01/2012 - 05/17/2012	16	109,798			
French.Is.4	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	05/18/2012 - 05/22/2012	3	22,042			
French.Is.4	Peaking	Forced	Gas Turbine Compressor - High Pressure Bearings	05/09/2012 - 05/17/2012	8	910,447			
HighBridge.7	CC	Extension	Major Gas Turbine Overhaul	05/27/2012 - 05/31/2012	3	338,675			
HighBridge.9	CC	Extension	Major Gas Turbine Overhaul	05/27/2012 - 05/31/2012	3	201,646			
Inver.Hills.1G	Peaking	Maintenance	Gas Turbine - Lube Oil System - General	05/15/2012 - 05/17/2012	2	53,708			
Inver.Hills.1G	Peaking	Forced	Generator Output Breaker	05/18/2012 - 05/21/2012	2	81,496			
Sherburne.2	Steam	Derate	High Pressure Heater Tube Leaks	05/14/2012 - 05/17/2012	3	151,170			
Sherburne.2	Steam	Derate	Condensate Makeup And Return (inc. Storage Tanks)	05/27/2012 - 05/31/2012	4	1,393,381			
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	05/01/2012 - 05/31/2012	31	9,522,068			
Wheaton.1G	Peaking	Forced	Fire protection system instrumentation and control	05/01/2012 - 05/11/2012	10	105,680			
Wheaton.3G	Peaking	Maintenance	Gas Turbine - Fire Detection And Extinguishing Sys	05/17/2012 - 05/18/2012	1	15,005			
Wheaton.4G	Peaking	Maintenance	Gas Turbine - Fire Detection And Extinguishing Sys	05/17/2012 - 05/18/2012	1	21,255			
Forced Outages - Totals					123	17,921,636			
Allen.S.King.1	Steam	Scheduled	Other Tube Slagging Or Fouling	05/04/2012 - 05/31/2012	27	8,438,826			
Black.Dog.3	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	05/11/2012 - 05/31/2012	20	996,885			
HighBridge.7	CC	Scheduled	Major Gas Turbine Overhaul	05/05/2012 - 05/23/2012	18	1,714,414			
HighBridge.7	CC	Scheduled	Major Gas Turbine Overhaul	05/23/2012 - 05/24/2012	1	144,897			
HighBridge.7	CC	Scheduled	Major Gas Turbine Overhaul	05/25/2012 - 05/27/2012	1	159,754			
HighBridge.8	CC	Scheduled	Major Gas Turbine Overhaul	05/05/2012 - 05/20/2012	15	1,412,943			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/05/2012 - 05/20/2012	15	1,588,548			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/21/2012 - 05/23/2012	1	114,787			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/23/2012 - 05/24/2012	1	83,799			
HighBridge.9	CC	Scheduled	Major Gas Turbine Overhaul	05/25/2012 - 05/27/2012	1	95,430			
Prairie.Island.2	Nuclear	Scheduled	Normal Refueling	05/01/2012 - 05/29/2012	28	9,233,985			
Prairie.Island.2	Nuclear	Scheduled	Fuel Preconditioning	05/29/2012 - 05/31/2012	2	665,335			
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	05/01/2012 - 05/02/2012	1	162,289			
Sherburne.1	Steam	Scheduled	Main Steam Relief/safety Valves	05/02/2012 - 05/04/2012	1	515,069			
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	05/04/2012 - 05/30/2012	25	2,397,436			
Sherburne.1	Steam	Scheduled	Chemical Cleaning/steam Blows	05/30/2012 - 05/31/2012	1	836,675			
Sherburne.2	Steam	Scheduled	Miscellaneous Regulatory	05/17/2012 - 05/24/2012	6	3,353,015			
Scheduled Outages - Totals					164	31,914,087			
Total					287	49,835,723			

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
(2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	19,804,894
Total Replacement Purchase MWh	1,825,378
Increased Cost per MWh	\$10.85

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

Northern States Power, A Minnesota Corporation
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 June 2012

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ACTUAL

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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	06/03/2012 - 06/07/2012	3		1,471,446		
Allen.S.King.1	Steam	Forced	Slag-tap (cyclone Furnace)	06/20/2012 - 06/22/2012	1		557,391		
BD25.CC	Steam	Extension	Other Safety Problems	06/01/2012 - 06/30/2012	30		4,985,812		
Black.Dog.3	Steam	Extension	Boiler Inspections - Scheduled or Routine	06/03/2012 - 06/19/2012	15		649,992		
Black.Dog.4	Steam	Derate	Flood	06/20/2012 - 06/29/2012	9		63,369		
French.Is.2	RDF	Forced	Conductors And Buses	06/06/2012 - 06/14/2012	8		60,153		
French.Is.2	RDF	Maintenance	Refractory (Ibc Only)	06/15/2012 - 06/21/2012	6		41,084		
HighBridge.7	CC	Derate	Other Gas Turbine Combustor Problems	06/04/2012 - 06/13/2012	9		66,719		
HighBridge.9	CC	Derate	Other Gas Turbine Combustor Problems	06/04/2012 - 06/13/2012	9		32,297		
Inver.Hills.3G	Peaking	Forced	Gas Turbine - Hydraulic Oil System	06/04/2012 - 06/09/2012	4		126,074		
Inver.Hills.4G	Peaking	Forced	Gas Turbine - Fire Detection And Extinguishing Sys	06/04/2012 - 06/08/2012	1		50,934		
Inver.Hills.6G	Peaking	Forced	Generator Synchronization Equipment	06/08/2012 - 06/11/2012	3		71,345		
Riverside.10	CC	Extension	Other Hydrogen System Problems	06/16/2012 - 06/19/2012	3		250,829		
Riverside.7	CC	Derate	Other Hydrogen System Problems	06/16/2012 - 06/19/2012	3		154,166		
Sherburne.1	Steam	Forced	Waterwall (Furnace Wall)	06/25/2012 - 06/27/2012	2		878,521		
Sherburne.2	Steam	Derate	Condensate Makeup And Return (inc. Storage Tanks)	06/01/2012 - 06/02/2012	1		370,504		
Sherburne.2	Steam	Derate	First Reheater Leaks	06/02/2012 - 06/10/2012	8		2,752,350		
Sherburne.2	Steam	Derate	Induced Draft Fan Fouling	06/10/2012 - 06/14/2012	4		252,446		
Sherburne.2	Steam	Maintenance	First Reheater Leaks	06/14/2012 - 06/21/2012	6		2,319,320		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	06/01/2012 - 06/30/2012	30		9,160,688		
Wheaton.2G	Peaking	Forced	Generator Output Breaker	06/06/2012 - 06/15/2012	8		137,803		
Wheaton.4G	Peaking	Maintenance	Other Fire Protection System Problems	06/04/2012 - 06/08/2012	4		119,780		
Wheaton.4G	Peaking	Forced	Generator Output Breaker	06/11/2012 - 06/13/2012	2		35,562		
Wheaton.4G	Peaking	Forced	Generator Output Breaker	06/15/2012 - 06/19/2012	3		40,398		
Willmarth.1	Peaking	Forced	Generator Vibration	06/06/2012 - 06/10/2012	3		19,109		
Forced Outages - Totals						175	24,668,092		
Allen.S.King.1	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	06/01/2012 - 06/03/2012	2		783,206		
Black.Dog.3	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	06/01/2012 - 06/03/2012	2		113,519		
Riverside.10	CC	Scheduled	Gas Turbine - Boroscope Inspection	06/09/2012 - 06/16/2012	7		541,142		
Riverside.7	CC	Scheduled	Gas Turbine - Boroscope Inspection	06/09/2012 - 06/16/2012	7		560,075		
Riverside.9	CC	Scheduled	Gas Turbine - Boroscope Inspection	06/09/2012 - 06/16/2012	7		541,142		
Sherburne.1	Steam	Scheduled	Chemical Cleaning/steam Blows	06/01/2012 - 06/08/2012	7		3,541,560		
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	06/09/2012 - 06/25/2012	16		1,302,897		
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	06/28/2012 - 06/30/2012	2		415,703		
Willmarth.1	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	06/10/2012 - 06/20/2012	10		41,432		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	06/10/2012 - 06/16/2012	5		22,666		
Scheduled Outages - Totals						65	7,863,338		
Total						240	32,531,430		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
 (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	12,923,804
Total Replacement Purchase MWh	1,192,506
Increased Cost per MWh	\$10.84

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Northern States Power, A Minnesota Corporation
 Unit Outage Information - ACTUAL VS FORECAST
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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
Allen.S.King.1	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	06/03/2012 - 06/07/2012	3		1,474,239		
Allen.S.King.1	Steam	Forced	Slag-tap (cyclone Furnace)	06/20/2012 - 06/22/2012	1		560,985		
BD25.CC	Steam	Extension	Other Safety Problems	06/01/2012 - 06/30/2012	30		4,985,812		
Black.Dog.3	Steam	Extension	Boiler Inspections - Scheduled or Routine	06/03/2012 - 06/19/2012	15		686,018		
Black.Dog.4	Steam	Derate	Flood	06/20/2012 - 06/29/2012	9		65,202		
French.Is.2	RDF	Forced	Conductors And Buses	06/06/2012 - 06/14/2012	8		60,153		
French.Is.2	RDF	Maintenance	Refractory (Ibc Only)	06/15/2012 - 06/21/2012	6		41,084		
HighBridge.7	CC	Derate	Other Gas Turbine Combustor Problems	06/04/2012 - 06/13/2012	9		66,719		
HighBridge.9	CC	Derate	Other Gas Turbine Combustor Problems	06/04/2012 - 06/13/2012	9		32,297		
Inver.Hills.3G	Peaking	Forced	Gas Turbine - Hydraulic Oil System	06/04/2012 - 06/09/2012	4		126,074		
Inver.Hills.4G	Peaking	Forced	Gas Turbine - Fire Detection And Extinguishing Sys	06/04/2012 - 06/08/2012	1		50,934		
Inver.Hills.6G	Peaking	Forced	Generator Synchronization Equipment	06/08/2012 - 06/11/2012	3		71,345		
Riverside.10	CC	Extension	Other Hydrogen System Problems	06/16/2012 - 06/19/2012	3		250,829		
Riverside.7	CC	Derate	Other Hydrogen System Problems	06/16/2012 - 06/19/2012	3		154,166		
Sherburne.1	Steam	Forced	Waterwall (Furnace Wall)	06/25/2012 - 06/27/2012	2		917,473		
Sherburne.2	Steam	Derate	Condensate Makeup And Return (inc. Storage Tanks)	06/01/2012 - 06/02/2012	1		370,504		
Sherburne.2	Steam	Derate	First Reheater Leaks	06/02/2012 - 06/10/2012	8		2,797,127		
Sherburne.2	Steam	Derate	Induced Draft Fan Fouling	06/10/2012 - 06/14/2012	4		289,189		
Sherburne.2	Steam	Maintenance	First Reheater Leaks	06/14/2012 - 06/21/2012	6		2,395,288		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	06/01/2012 - 06/30/2012	30		9,449,937		
Wheaton.2G	Peaking	Forced	Generator Output Breaker	06/06/2012 - 06/15/2012	8		137,803		
Wheaton.4G	Peaking	Maintenance	Other Fire Protection System Problems	06/04/2012 - 06/08/2012	4		119,780		
Wheaton.4G	Peaking	Forced	Generator Output Breaker	06/11/2012 - 06/13/2012	2		35,562		
Wheaton.4G	Peaking	Forced	Generator Output Breaker	06/15/2012 - 06/19/2012	3		40,398		
Willmarth.1	Peaking	Forced	Generator Vibration	06/06/2012 - 06/10/2012	3		19,109		
Forced Outages - Totals						175	25,198,027		
Allen.S.King.1	Steam	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	06/01/2012 - 06/03/2012	2		797,266		
Black.Dog.3	Steam	Scheduled	Boiler Inspections - Scheduled or Routine	06/01/2012 - 06/03/2012	2		114,559		
Riverside.10	CC	Scheduled	Gas Turbine - Boroscope Inspection	06/09/2012 - 06/16/2012	7		541,142		
Riverside.7	CC	Scheduled	Gas Turbine - Boroscope Inspection	06/09/2012 - 06/16/2012	7		560,075		
Riverside.9	CC	Scheduled	Gas Turbine - Boroscope Inspection	06/09/2012 - 06/16/2012	7		541,142		
Sherburne.1	Steam	Scheduled	Chemical Cleaning/steam Blows	06/01/2012 - 06/08/2012	7		3,551,456		
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	06/09/2012 - 06/25/2012	16		1,373,201		
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	06/28/2012 - 06/30/2012	2		415,703		
Willmarth.1	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	06/10/2012 - 06/20/2012	10		41,432		
Willmarth.2	Peaking	Scheduled	Major Boiler Overhaul (720 Hours Or Longer)	06/10/2012 - 06/16/2012	5		22,666		
Scheduled Outages - Totals						65	7,958,642		
Total						240	33,156,669		

(1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
 (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	13,549,043
Total Replacement Purchase MWh	1,192,506
Increased Cost per MWh	\$11.36

PUBLIC DOCUMENT - TRADE SECRET DATA EXCISED

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 Unit Outage Information - ACTUAL VS FORECAST
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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	07/01/2012 - 07/31/2012	31		6,726,854		
Black.Dog.4	Steam	Derate	Flood	07/01/2012 - 07/12/2012	11		292,840		
Black.Dog.4	Steam	Maintenance	Condenser Tube Fouling Tube Side	07/12/2012 - 07/15/2012	2		297,091		
Black.Dog.4	Steam	Derate	Condenser Loss Of Vacuum	07/19/2012 - 07/31/2012	12		245,927		
Blue.Lake.1	Peaking	Forced	Gas Turbine - Gas Fuel System	07/06/2012 - 07/11/2012	4		433,597		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	07/27/2012 - 07/31/2012	4		30,111		
French.Is.4	Peaking	Forced	Emergency Generator Trip Devices	07/05/2012 - 07/09/2012	3		410,283		
Granite.City.1	Peaking	Forced	Gas Turbine - Lube Oil System - General	07/02/2012 - 07/05/2012	2		25,409		
Granite.City.1	Peaking	Forced	Other Switchyard Equipment-external	07/17/2012 - 07/31/2012	14		106,993		
Granite.City.2	Peaking	Forced	Other Switchyard Equipment-external	07/17/2012 - 07/31/2012	14		112,130		
Key.City.3	Peaking	Forced	Gas Turbine - Lube Oil System - General	07/05/2012 - 07/12/2012	6		45,892		
Key.City.3	Peaking	Forced	Gas Turbine - Lube Oil System - General	07/16/2012 - 07/18/2012	2		30,270		
Key.City.4	Peaking	Forced	Gas Turbine - Turning Gear And Motor	07/24/2012 - 07/27/2012	2		22,808		
Riverside.10	CC	Maintenance	Transmission equipment at the 1st substation	07/21/2012 - 07/22/2012	1		105,536		
Riverside.7	CC	Maintenance	Transmission equipment at the 1st substation	07/21/2012 - 07/22/2012	1		100,443		
Riverside.9	CC	Maintenance	Transmission equipment at the 1st substation	07/21/2012 - 07/22/2012	1		95,268		
Sherburne.1	Steam	Maintenance	Waterwall (Furnace Wall)	07/07/2012 - 07/09/2012	2		973,542		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	07/01/2012 - 07/31/2012	31		13,199,676		
Wheaton.5	Peaking	Forced	Generator Inspection	07/05/2012 - 07/08/2012	3		150,694		
Willmarth.2	Peaking	Forced	Thermal Discharge Limits	07/05/2012 - 07/09/2012	4		25,574		
Forced Outages - Totals						150	23,430,938		
Red.Wing.1	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	07/08/2012 - 07/15/2012	6		37,601		
Red.Wing.2	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	07/08/2012 - 07/15/2012	6		36,318		
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	07/01/2012 - 07/02/2012	1		191,342		
Scheduled Outages - Totals						13	265,261		
Total						163	23,696,199		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2a) Outage MWh are calculated as follows: When LMPs are greater than unit incremental cost then Max Values are used
- (2b) Outage MWh are calculated as follows: When LMPs are less than unit incremental cost then Min Values are used

Total Change in Energy Costs	11,394,304
Total Replacement Purchase MWh	638,037
Increased Cost per MWh	\$17.86

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TRADE SECRET DATA BEGINS...

Unit	Type of Plant	Outage Category	Reason for outage	Date	Duration (Days)	Total Outage MWH	Average Replacement Cost	Unit Incremental Cost	Change in Energy Costs Due to Outages
BD25.CC	Steam	Extension	Other Safety Problems	07/01/2012 - 07/31/2012	31		6,726,854		
Black.Dog.4	Steam	Derate	Flood	07/01/2012 - 07/12/2012	11		294,292		
Black.Dog.4	Steam	Maintenance	Condenser Tube Fouling Tube Side	07/12/2012 - 07/15/2012	2		297,175		
Black.Dog.4	Steam	Derate	Condenser Loss Of Vacuum	07/19/2012 - 07/31/2012	12		248,978		
Blue.Lake.1	Peaking	Forced	Gas Turbine - Gas Fuel System	07/06/2012 - 07/11/2012	4		433,597		
French.Is.2	RDF	Maintenance	Minor Boiler Overhaul (less Than 720 Hours)	07/27/2012 - 07/31/2012	4		30,111		
French.Is.4	Peaking	Forced	Emergency Generator Trip Devices	07/05/2012 - 07/09/2012	3		410,283		
Granite.City.1	Peaking	Forced	Gas Turbine - Lube Oil System - General	07/02/2012 - 07/05/2012	2		25,409		
Granite.City.1	Peaking	Forced	Other Switchyard Equipment-external	07/17/2012 - 07/31/2012	14		106,993		
Granite.City.2	Peaking	Forced	Other Switchyard Equipment-external	07/17/2012 - 07/31/2012	14		112,130		
Key.City.3	Peaking	Forced	Gas Turbine - Lube Oil System - General	07/05/2012 - 07/12/2012	6		45,892		
Key.City.3	Peaking	Forced	Gas Turbine - Lube Oil System - General	07/16/2012 - 07/18/2012	2		30,270		
Key.City.4	Peaking	Forced	Gas Turbine - Turning Gear And Motor	07/24/2012 - 07/27/2012	2		22,808		
Riverside.10	CC	Maintenance	Transmission equipment at the 1st substation	07/21/2012 - 07/22/2012	1		105,536		
Riverside.7	CC	Maintenance	Transmission equipment at the 1st substation	07/21/2012 - 07/22/2012	1		100,443		
Riverside.9	CC	Maintenance	Transmission equipment at the 1st substation	07/21/2012 - 07/22/2012	1		95,268		
Sherburne.1	Steam	Maintenance	Waterwall (Furnace Wall)	07/07/2012 - 07/09/2012	2		984,288		
Sherburne.3	Steam	Extension	Major Boiler Overhaul (720 Hours Or Longer)	07/01/2012 - 07/31/2012	31		13,239,897		
Wheaton.5	Peaking	Forced	Generator Inspection	07/05/2012 - 07/08/2012	3		150,694		
Willmarth.2	Peaking	Forced	Thermal Discharge Limits	07/05/2012 - 07/09/2012	4		25,574		
Forced Outages - Totals						150	23,486,492		
Red.Wing.1	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	07/08/2012 - 07/15/2012	6		37,601		
Red.Wing.2	RDF	Scheduled	Minor Boiler Overhaul (less Than 720 Hours)	07/08/2012 - 07/15/2012	6		36,318		
Sherburne.1	Steam	Scheduled	Induced Draft Fan Motors And Drives	07/01/2012 - 07/02/2012	1		191,852		
Scheduled Outages - Totals						13	265,771		
Total						163	23,752,263		

- (1) Outages/Derates of one day durations or longer and greater than or equal to 500 MWh are included
- (2) Outage MWh are calculated as follows: Unit Dispatch Max Values X 24 hours X Number of full outage days

Total Change in Energy Costs	11,450,368
Total Replacement Purchase MWh	638,037
Increased Cost per MWh	\$17.95

CERTIFICATE OF SERVICE

I, SaGonna Thompson, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota

xx electronic filing

DOCKET No. E999/AA-12-757

Dated this 26th day of August 2013

/s/

SaGonna Thompson

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