

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

<b>AN EXAMINATION OF THE APPLICATION</b>	)	
<b>OF THE FUEL ADJUSTMENT CLAUSE OF</b>	)	<b>CASE NO. 2020-00006</b>
<b>KENTUCKY UTILITIES COMPANY FROM</b>	)	
<b>MAY 1, 2019 TO OCTOBER 31, 2019</b>	)	


**RESPONSE OF**  
**KENTUCKY UTILITIES COMPANY**  
**TO**  
**COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**  
**DATED APRIL 2, 2020**

**FILED: APRIL 16, 2020**

VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 )  
COUNTY OF JEFFERSON )

The undersigned, **Michael P. Drake**, being duly sworn, deposes and says that he is Director – Generation Services for LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
Michael P. Drake

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 3rd day of April 2020.

  
Notary Public

Notary Public, ID. No. 623869

My Commission Expires:

05/23/2023



VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 ) SS:  
COUNTY OF JEFFERSON )

The undersigned, **Charles R. Schram**, being duly sworn, deposes and says that he is Director — Power Supply, for LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
Charles R. Schram

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 3<sup>rd</sup> day of April 2020.

 (SEAL)

Notary Public

My Commission Expires:  
**Judy Schooler**  
**Notary Public, ID No. 603967**  
~~State at Large, Kentucky~~  
**Commilssion Expires 7/11/2022**

## KENTUCKY UTILITIES COMPANY

### Response to Commission Staff's Second Request for Information Dated April 2, 2020

Case No. 2020-00006

#### Question No. 1

#### Responding Witness: Charles R. Schram

- Q-1. Refer to KU's response to Staff's First Request, Item 6. Explain the process for purchasing gas generally and specifically for purchases from LG&E Gas Supply.
- A-1. As indicated in the response to PSC 1-11, the Companies' general guidelines for spot and forward natural gas purchases are contained in the Power Supply Commodity Policy – Natural Gas Fuel for Generation. The policy did not change during the review period and the August 1, 2017 version was previously provided to the Commission in Case No. 2018-00020<sup>1</sup> in response to Question No. 11. Minor changes to the policy were effective January 1, 2020. The current document is attached.

Most natural gas purchases for generation, including the fuel supply for natural gas peaking units and a portion of the fuel supply for the Cane Run 7 combined cycle unit, are met by spot market purchases using the Intercontinental Exchange ("ICE") trading platform or from various natural gas suppliers. The ICE trading platform is also used for price discovery when transacting directly with suppliers to seek more favorable pricing. These suppliers are sometimes able to offer larger volumes and additional liquidity than the ICE trading platform.

To reduce fuel cost volatility, the Companies also use forward purchases for a portion of the Cane Run 7 gas supply. A Request for Proposals ("RFP") process is used for these forward purchases. Purchase volumes are based on a range of forecasted usage.

LG&E Gas Supply is the Local Distribution Company ("LDC") supplying gas to the Mill Creek plant (startup and stabilization fuel for coal units) and the small (14 MW) gas-fired Zorn combustion turbine. Mill Creek and Zorn are directly connected to the LG&E LDC rather than being directly connected to interstate pipelines. The Mill Creek plant notifies the LDC of upcoming gas usage for unit starts, and all gas is purchased in accordance with the terms of a special contract with the LDC. For Zorn, Generation Dispatch notifies the LDC when there is a need to operate the unit.

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<sup>1</sup> *Electronic Examination of the Application of the Fuel Adjustment Clause of Kentucky Utilities Company From May 1, 2017 Through October 31, 2017, Kentucky Public Service Commission, Case No. 2018-00020, filed February 16, 2018, Final Order May 18, 2018*



# **Power Supply Commodity Policy – Natural Gas Fuel for Generation**

Operating Policy for the Power Supply Group

Effective Date – January 1, 2020

# Signatures


## Power Supply Commodity Policy – Natural Gas Fuel for Generation

Procedure Title

**January 1, 2020**

Effective Date

### Preparer(s) Signatures

12/10/2019	12/12/2019
<p>X </p> <hr/> <p>Linn Oelker Manager - Market Compliance Signed by: Linn Oelker</p>	<p>X Charlie Martin</p> <hr/> <p>Charlie Martin Manager - Generation Dispatch and Trading Signed by: Charlie Martin</p>

### Required Approval Signatures

12/12/2019	12/16/2019
<p>X Chuck Schram</p> <hr/> <p>Chuck Schram Director - Power Supply Signed by: Chuck Schram</p>	<p>X David Sinclair</p> <hr/> <p>David Sinclair VP - Energy Supply and Analysis Signed by: David Sinclair</p>
12/20/2019	
<p>X Lonnie Bellar</p> <hr/> <p>Lonnie Bellar Chief Operating Officer Signed by: Bellar, Lonnie</p>	

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## Revision History

Version No. 3	Effective – January 1, 2020
Summary of Changes	
<ol style="list-style-type: none"><li>1. Updated signatories and titles to reflect organizational changes</li><li>2. Replaced IT Service Desk with Technology Support Center</li><li>3. Clarified requirements surrounding the issuance and response to an RFP to allow for email or physical correspondence.</li></ol>	
Version No. 2	Effective – August 1, 2017
Summary of Changes	
<ol style="list-style-type: none"><li>1. Moved information classification to the footer</li><li>2. Updated signatories to reflect organizational changes.</li></ol>	
Version No. 1	Effective – February 1, 2016
Summary of Changes	
<ol style="list-style-type: none"><li>1. Initial version.</li></ol>	



## Purpose

The purpose of this document is to outline a uniform standard operational policy related to commercial activity for all natural gas and natural gas related commodity transactions consummated for use as a power generation fuel by Louisville Gas and Electric Company (LG&E) or Kentucky Utilities Company (KU).

## Scope

This policy applies to all employees in the Power Supply Group (PSG) which transacts on behalf of Louisville Gas and Electric Company (LG&E) or Kentucky Utilities Company (KU) (Company).

## Definitions

The following terms and acronyms are used frequently in this document:

**Agreement** - A legally binding document fully executed by both buyer and seller in which

- 1) one party agrees to sell a Commodity and
- 2) the other agrees to
  - a) buy a Commodity or
  - b) the conditions under which a Commodity would be purchased.

**Authority Limit Matrix** - The Authority Limit Matrix (ALM) is a company policy that is to be used as a guide in combination with the more detailed policies and procedures covering specific topics. Its purpose is to provide an easily accessible source of information with respect to the approval process of LG&E and/or KU.

**Award Recommendation** - The Company's internal process for the review and approval by management of a recommended Long Term Commodity Transaction.

**Commodity(ies)** – In this document, commodities include physical natural gas and pipeline transportation, services, and storage.

**Commodity Transaction** – A unique Agreement or a confirmation under a master Agreement between a buyer and a seller involving Commodities.

**Company** - Louisville Gas and Electric Company (LG&E) or Kentucky Utilities Company (KU) or both.

**Firm** – A Commodity sale or purchase which is not Non-Firm.

**Gas Day** – As defined by the North American Energy Standards Board (NAESB), which currently begins at 09:00 Central Clock Time (CCT) and runs for 24 hours.

**Individual Contributor** – The positions within the PSG of Scheduler and Trader job family.

**Long Term Commodity Transactions** – Any Commodity Transaction that exceeds the term, tenor, or notional amount of the authority granted to the Manager – Generation Dispatch and Trading by the ALM.

**Non-Firm**– A Commodity sale or purchase for which receipt or delivery may be interrupted for any reason or no reason, without financial liability on the part of either the buyer or the seller.

**PSG Real Time Personnel** – Associate Dispatcher, Dispatcher, Senior Dispatcher, Supervisor Generation Dispatch, Associate Scheduler, Scheduler, Senior Scheduler, Associate Trader, Trader, Senior Trader, Supervisor Hourly Trading, Manager – Generation Dispatch and Trading, Director – Power Supply.

**Records Management and Retention Policy** - The policy maintained by the Company's Corporate Compliance Group that outlines managing the life cycle of all company documents (which include all official records, data and information whether paper or electronic) while effectively balancing its legal and business obligations.

**Request for Proposal (RFP)** - A process for soliciting sealed bids from suppliers of a Commodity and is typically sent in the form of a written request to industry suppliers and may be published for distribution through media outlets.

**Short Term Commodity Transaction** – Any Commodity Transaction that is within the term, tenor, or notional amount of the Manager – Generation Dispatch and Trading by the ALM.

**Training** - training of PSG employees that is (i) comparable to generally accepted practices in the energy trading industry, and (ii) commensurate and proportional in sophistication, scope and frequency to the volume of transactions and the nature and extent of the risk taken by the Company.

## **Section 1 Organization**

### **1.1 Departmental Structure**

The Power Supply Group shall be organized and staffed to effectively administer the PSG's commercial activities.

### **1.2 Organizational Responsibilities**

The Director - Power Supply is responsible for the operations of the PSG and reports directly to the Vice President, Energy Supply and Analysis who is responsible for the Energy Supply and Analysis line of business including the PSG functions. The Vice President - Energy Supply and Analysis reports directly to the Chief Operating Officer who has the final responsibility for commercial activities of the PSG. Other Departments may be utilized by the PSG to the extent the Director - Power Supply, Vice President-Energy Supply and Analysis, and Chief Operating Officer consider advisable in the execution of the functions of the group.

### **1.3 Commodity Approval Authority**

Short Term Commodity Transactions are executed by Power Supply personnel through the authority granted by the ALM.

Long Term Commodity Transaction are executed by Power Supply personnel through the authority granted by the approval of an Award Recommendation.

The execution of Commodity Transactions will comply with internal business controls including the Authority Limit Matrix, Sarbanes Oxley compliance and Internal Audit Services' recommendations. The Company has detailed internal control procedures covering Commodity Transactions, Contract Administration and Confirmations, and Credit.

## **Section 2 Reports**

The Director - Power Supply will instruct the PSG to prepare, maintain, and distribute various reports to management and others as deemed necessary for business operations and regulatory requirements.

## **Section 3 Records**

### **3.1 Commodity Accounting**

All personnel must document Short Term Commodity Transactions in the Company's commodity accounting system no later than the end of their first work period after the end of the respective Gas Day. Long Term Commodity Transactions must be accurately reflected in the commodity accounting system in time to ensure appropriate financial accounting.

### **3.2 Recording of Telephone Calls**

All Short Term Commodity Transactions must be executed on a recorded telephone line or on an electronic platform where the transaction is logged by the platform operator.

If the transaction is completed on the ICE electronic platform, a record of the transaction is electronically available to the Contract Administration department for confirmation against the Company's transaction records.

The phone recording will be maintained in accordance with the Records Management and Retention Policy. In the event the telephone recording system is out of service, personnel will promptly report the incident through the Technology Support Center.

### **3.3 Award Recommendations**

An Award Recommendation will be prepared for all Long Term Commodity Transactions. All approved Award Recommendations will be retained by the PSG in accordance with the Records Management and Retention Policy.

### **3.4 Agreements**

All executed Agreements will be sent to the Company's Contract Administration group who will be responsible for distribution within the Company and maintenance of the documents in accordance with the Records Management and Retention Policy.

Contract Administration will maintain active Agreements on site and the Agreements will be available in accordance with their departmental policies.

## **Section 4 Optimization Responsibilities**

The PSG is responsible for purchasing natural gas and natural gas transport (the Commodities governed by this policy) to fuel the Company's generation assets consistent with the Company's fuel procurement strategy that is developed in concert with coal needs. In executing these

responsibilities, the PSG shall use best efforts to keep current on market conditions, prices, availability and other developments relating to Commodities.

## **Section 5 Reserved for Future Use.**

## **Section 6 Short Term Commodity Transactions**

The Power Supply Traders are responsible for surveying the market by phone, instant messaging, electronic platforms, and any other standard industry process with the objective of obtaining the best value for the Commodities when executing Short Term Commodity Transactions. Traders will take into account prices, availability of transport, Operational Flow Orders, transport alerts and/or restrictions, as well as other market developments for a particular Commodity when determining the best value.

Power Supply Traders may only execute Short Term Commodity Transactions in real time within their authority limits as provided in the ALM.

### **6.1 Natural Gas**

Personnel may buy and sell Non-Firm natural gas. Individual Contributors may only buy or sell Firm natural gas after written approval provided by the Manager – Generation Dispatch and Trading or the Director – Power Supply.

### **6.2 Natural Gas Transport**

Personnel may buy Firm and Non-Firm natural gas transport to serve Company's generation assets. Firm transport may only be purchased after written approval of the Manager – Generation Dispatch and Trading or the Director – Power Supply.

## **Section 7 Long Term Commodity Transactions**

Power Supply personnel are responsible for surveying the market and obtaining the best value for the Commodities when recommending Long Term Commodity Transactions. Power Supply personnel will use the Award Recommendation process when recommending a Long Term Commodity Transaction to management.

## **7.1 Award Recommendation Process**

An Award Recommendation will be prepared for all Long Term Commodity Transactions. The Award Recommendation will take into account prices, availability of transport and/or storage, operational flow orders, transport alerts and/or restrictions, as well as other market developments for a particular Commodity when determining the best value. Power Supply may rely on other groups within the Company, as well as external consultants, to develop market analysis for consideration during a Request for Proposal.

A proposed Award Recommendation must be signed (at a minimum) by the Legal Department, Credit Department, Financial Reporting Department, Director – Power Supply, and the VP-Energy Supply and Analysis. Additional approvals may be necessary in accordance with the ALM.

## **7.2 Request for Proposal (RFP)**

- 7.2.1 The Generation Planning department provides projections to the PSG of the Commodities needed for the company's long term planning horizons.
- 7.2.2 The Company may select potential suppliers on the basis of past performance of past and current Agreements, market intelligence from industry research, credit analysis, and general knowledge of the industry. Potential suppliers are periodically reviewed by the PSG to eliminate any suppliers that are known to have gone out of business and to also add any new or existing suppliers that may previously have not been considered.
- 7.2.3 A notice of the RFP is sent to industry suppliers via email or physical correspondence and may be published for distribution through media outlets.
- 7.2.4 The RFP shall include at a minimum the following:
  - a. Instructions to Supplier on the submission of the response.
  - b. Response due date and time.
  - c. Scope of the commodity agreement request.
  - d. Company terms and conditions.
- 7.2.5 The RFP will be approved by the VP-Energy Supply and Analysis prior to issuance.
- 7.2.6 Responses to the RFP shall be received via email or physical correspondence.
- 7.2.7 Responses to the RFP shall be opened on or after the published due date and time and in the presence of one or more employees from outside the PSG.
- 7.2.8 Those bids received after the designated time will be returned unopened to the bidder, unless the Director - Power Supply waives this provision.

- 7.2.9 No potential qualified supplier shall be preferred or discriminated against because of race, religion, color, sex, age or marital status of the supplier or any of its representatives.

### **7.3 Sole sourcing**

- 7.3.1 A RFP process may not be appropriate for all Long Term Commodity Transactions. Sole-sourced transactions may be appropriate under any the following circumstances:
- a. The goods or services being procured are a monopoly service.
  - b. An urgent situation does not allow adequate time for a Request For Proposal.
  - c. The lack of two or more qualified bidders is documented.
  - d. Management determines and clearly documents that there is only one acceptable supplier.
- 7.3.2 A Sole Source Authorization section must be included in a proposed Award Recommendation detailing the sole-source circumstances.

## **Section 8 Transaction Agreement Enforcement**

The PSG is responsible for protecting the interests of the Company under the agreements with the counterparties. The PSG will work with other Company departments, such as the Legal Department, to enforce the Company's rights.

## **Section 9 Reliability Transactions**

Consistent with NERC Reliability Standards (EOP-002-3.1 and PER-001-0.1 R1), PSG Real Time Personnel are authorized to take any actions necessary to enter into Short Term Commodity Transactions for natural gas that exceed their limits stated in the ALM if, and only if, such actions are necessary to maintain system reliability. Maintaining system reliability may be due to request from the Transmission Operator, Balancing Authority, or Reliability Coordinator, or required to meet NERC standards or that absent such actions, one could reasonably expect the Company would declare an Energy Emergency Alert (EEA). Any such Short Term Commodity Transaction entered into on this basis must be reported in writing to the Director – Power Supply and the Vice President – Energy Supply and Analysis within twelve (12) hours of the transaction with a detailed explanation as to the nature of the reliability issue and why it was not possible to enter into transactions in compliance with the ALM.

## **Section 10 Ethics and Conduct**

The Company recognizes the importance of following the Company's Standards of Integrity to guide the conduct of the PSG in the performance of its duties and responsibilities.

The group shall endeavor to serve the best interests of the Company and its customers in the performance of the group's duties and responsibilities. PSG personnel shall adhere to the ethical standards and policies of the Company.

## **Section 11 Affiliate Transactions**

Transactions and relationships between the Company and its unregulated affiliates are governed by four governmental agencies: the Kentucky Public Service Commission, the Federal Energy Regulatory Commission, the Securities and Exchange Commission, and as regards Kentucky Utilities Company, the Virginia State Corporation Commission.

Power Supply personnel may only execute transactions with affiliates in accordance with the applicable affiliate restriction regulations.

## **Section 12 Training**

Each PSG employee is expected to be familiar with all Company policies and procedures that are relevant to the PSG employee's activities, as well as the practices and protocols implemented by providers of natural gas and the pipeline entities transporting natural gas. Training for Individual Contributors includes initial supervised Training prior to independently conducting trading activities, as well as initial and refresher Training on certain regulatory and corporate policy issues. Training will be conducted by PSG employees and by the Company's Corporate Compliance Group.

### **Individual Responsibilities; Penalties For Noncompliance**

All Power Supply employees are required to familiarize themselves with this Power Supply Commodity Policy – Natural Gas Fuel for Generation and acknowledge through a process established by management, that they have received, read, understood, accepted, and will act in accordance with this document. Failure to comply with any term of this policy may result in disciplinary action, up to and including discharge.

**Key Contacts:**           Manager - Market Compliance

**References:** Authority Limit Matrix, Records Management and Retention Policy, Standards of Integrity-PPL, NERC Reliability Standards.

**Administrative Responsibility:** Director – Power Supply



# **KENTUCKY UTILITIES COMPANY**

## **Response to Commission Staff's Second Request for Information Dated April 2, 2020**

**Case No. 2020-00006**

### **Question No. 2**

**Responding Witness: Michael P. Drake**

- Q-2. Refer to KU's response to Staff's First Request, Item 15, Attachment.
- a. Explain how KU defines scheduled and forced outages.
  - b. Explain how an outage can be classified as "scheduled," but does not appear to have been planned for. For example, see the actual outage listed for E.W. Brown Unit 3 from 5/10/2019 to 5/18/2019.
- A-2
- a. The Commission's regulation at 807 KAR 5:056, Section 1(4) defines forced outages. A scheduled outage is any outage that has been planned. In terms of GADS codes, Planned, Planned Extension, Maintenance and Maintenance Extension are all considered to be "scheduled" outages because they have been requested and approved by the load dispatcher ahead of the event. A forced outage occurs when a unit must be brought down immediately (typically less than 24 hours), regardless of approval from the load dispatcher, for reasons such as threat to human safety, inability to keep the unit online, or fear of immediate damage. For example, if a boiler incurs a minor tube leak on a Monday but plant management believe that the unit can safely run until the weekend, Generation Dispatch will schedule a maintenance outage based on load conditions. Alternately, if a boiler incurs a significant tube leak that, in the judgment of plant management, precludes safe and reliable operation through the weekend, plant management can make the decision to take the unit offline, but the unit will be credited with a forced outage.
  - b. In preparing this response, we reviewed the KU attachment to the response to PSC 1-15 and discovered an error in the attachment. Specifically, the automated process used to generate the report contained an error in the code that affected the two columns under the 'scheduled' header. As a result, some of the scheduled outages did not show dates, including E.W. Brown Unit 3 from 5/10/2019 to 5/18/2019. The error has been corrected, the report has been rerun and validated to confirm no additional errors, and the revised report is attached.

Kentucky Utilities Company  
May 2019 through October 2019

Unit and Outage Type (F=Forced; S=Scheduled)	Scheduled		Actual*		HOURS OF DURATION		REASON FOR DEVIATION FROM SCHEDULED MAINTENANCE OR REASON FOR FORCED OUTAGE AS APPROPRIATE	
	FROM	TO	FROM	TO	Scheduled	Actual*		
<b>E. W. Brown Unit 3 - Coal - 413 MW</b> In-service July 1971	S	4/27/2019 0:00	5/5/2019 0:00	5/10/2019 20:24	5/18/2019 20:25	192:00	192:01	Process Water System tie-in
	F			7/1/2019 10:56	7/3/2019 7:11		44:15	Turbine Vibration
	F			7/19/2019 0:31	7/19/2019 14:21		13:50	Generator Relay Protection
	S	8/21/2019 22:11	8/23/2019 10:51	8/21/2019 22:11	8/23/2019 10:51	36:40	36:40	Hot water recirculation system maintenance
	S	10/5/2019 0:00	12/8/2019 0:00	10/4/2019 21:00	12/9/2019 0:01	1536:00	1563:01	Major Turbine Overhaul
<b>Ghent Unit 1 - Coal - 479 MW</b> In-service February 1974	S	4/29/2019 0:00	5/9/2019 16:36	4/29/2019 0:00	5/9/2019 16:36	256:36	256:36	Minor turbine overhaul planned extension
	F			5/10/2019 13:54	5/11/2019 15:52		25:58	Generator Cooling System - Seal Repair
	F			5/11/2019 18:00	5/14/2019 11:54		65:54	Increased Turbine/Generator Vibration
	F			6/29/2019 3:18	6/29/2019 11:12		7:54	Pulverizer/burner piping fire
	F			6/29/2019 11:54	6/29/2019 18:10		6:16	Pulverizer/Burner Piping Fire
	S	8/3/2019 8:00	8/5/2019 6:51	8/3/2019 8:00	8/5/2019 6:51	46:51	46:51	Boiler Waterwall Tube Leak
<b>Ghent Unit 2 - Coal - 486 MW</b> In-service April 1977	S	5/13/2019 22:59	5/14/2019 17:48	5/13/2019 22:59	5/14/2019 17:48	18:49	18:49	Boiler waterwall tube leak
	S	9/21/2019 0:00	11/24/2019 23:59	9/21/2019 0:23	11/19/2019 12:38	1559:59	1428:15	Major turbine overhaul
<b>Ghent Unit 3 - Coal - 476 MW</b> In-service May 1981	S	10/5/2019 0:00	11/10/2019 0:00	10/4/2019 21:36	11/10/2019 7:19	864:00	873:43	Boiler Tube Replacement
<b>Ghent Unit 4 - Coal - 478 MW</b> In-service August 1984	S	6/14/2019 21:30	6/16/2019 19:10	6/14/2019 21:30	6/16/2019 19:10	45:40	45:40	Boiler Waterwall Tube Leak
<b>Trimble County Unit 2 - Coal - 570 MW</b> In-service January 2011 75% ownership share of 732 MW jointly owned with LG&E	S	4/29/2019 0:00	5/6/2019 0:00	4/29/2019 0:00	5/6/2019 0:00	168:00	168:00	Major turbine overhaul
	F			5/6/2019 0:00	5/10/2019 11:26		107:26	Turbine/Generator Bearing Repair
	F			5/10/2019 11:26	5/10/2019 19:47		8:21	Turbine/Generator Vibration
	F			5/10/2019 19:47	5/12/2019 5:49		34:02	Turbine/generator vibration balance correction
	F			5/12/2019 5:49	5/13/2019 12:02		30:13	Turbine/generator vibration balance correction
	F			5/13/2019 14:04	5/14/2019 4:29		14:25	Turbine/generator vibration balance correction
	F			5/14/2019 5:31	5/14/2019 14:32		9:01	Burner Management System Problem
	F			5/14/2019 17:07	5/16/2019 1:30		32:23	Feedwater Pump Controls
	F			5/16/2019 6:53	5/16/2019 14:52		7:59	Feedwater Pump Controls
	F			5/16/2019 17:05	5/18/2019 10:13		41:08	Feedwater Pump Controls
	S	5/22/2019 6:45	5/25/2019 17:15	5/22/2019 6:45	5/25/2019 17:15	82:30	82:30	Turbine/generator vibration balance correction
	F			7/13/2019 3:45	7/13/2019 12:27		8:42	Feedwater Pump Control Problem
	F			7/27/2019 16:11	7/30/2019 19:28		75:17	Boiler first reheater leak repair
	F			8/10/2019 13:00	8/12/2019 16:49		51:49	Boiler waterwall tube leak repair
	F			10/16/2019 23:00	10/18/2019 5:15		30:15	Boiler waterwall tube leak repair
S	12/7/2019 0:00	12/15/2019 23:55	10/18/2019 5:15	10/24/2019 9:35	215:55	148:20	Feedwater Pump Maintenance	
<b>Cane Run Unit 7 - Gas - 683 MW</b> In-service June 2015 Jointly owned with LG&E	S	6/7/2019 19:35	6/11/2019 0:00	6/7/2019 19:35	6/11/2019 0:00	76:25	76:25	Duct Expansion Joint Repair

\*Actual outage dates and hours of duration include scheduled and forced outages.

<b>E. W. Brown Unit 5 - Gas CT - 130 MW</b> In-service June 2001 Jointly owned with LG&E		No outages > or = 6 hours						
<b>E. W. Brown Unit 6 - Gas CT - 171 MW</b> In-service August 1999 Jointly owned with LG&E	S	4/13/2019 0:00	5/26/2019 0:00	4/11/2019 5:07	5/25/2019 0:00	1032:00	1050:53	Combustion turbine overhaul
	S	5/25/2019 0:00	5/31/2019 12:41	5/25/2019 0:00	5/31/2019 12:41	156:41	156:41	Combustion turbine overhaul
	S	6/1/2019 4:00	6/2/2019 10:06	6/1/2019 4:00	6/2/2019 10:06	30:06	30:06	Combustion turbine overhaul
	F			6/3/2019 8:35	6/4/2019 6:56		22:21	Fuel Gas System
	F			6/4/2019 9:16	6/4/2019 15:53		6:37	Fuel Gas System
	S	6/4/2019 18:25	6/5/2019 15:02	6/4/2019 18:25	6/5/2019 15:02	20:37	20:37	Combustion turbine overhaul
	S	6/6/2019 14:28	6/7/2019 11:42	6/6/2019 14:28	6/7/2019 11:42	21:14	21:14	Combustion turbine overhaul
	S	6/18/2019 8:17	6/18/2019 17:27	6/18/2019 8:17	6/18/2019 17:27	9:10	9:10	Gas Turbine Control System Inspection
	F			6/21/2019 18:57	6/22/2019 10:30		15:33	Combustion System Maintenance
	F			7/8/2019 19:23	7/9/2019 10:31		15:08	combustion system maintenance
	S	7/23/2019 6:37	7/23/2019 12:49	7/23/2019 6:37	7/23/2019 12:49	6:12	6:12	Gas line maintenance
	S	9/7/2019 0:00	9/15/2019 0:00	9/5/2019 16:00	9/11/2019 7:30	192:00	135:30	Borescope Inspection
	F			10/10/2019 15:44	10/11/2019 9:06		17:22	Combustion Turbine Enclosure Ventilation System
	F			10/17/2019 5:06	10/17/2019 13:36		8:30	Fuel Gas System
<b>E. W. Brown Unit 7 - Gas CT - 171 MW</b> In-service August 1999 Jointly owned with LG&E	S	6/7/2019 8:13	6/30/2019 9:00	6/7/2019 8:13	6/30/2019 9:00	552:47	552:47	Generator Maintenance and Testing
	F			6/30/2019 9:00	8/4/2019 13:26		844:26	Generator Maintenance and Testing
	S	9/7/2019 0:00	9/15/2019 0:00	9/3/2019 16:00	9/13/2019 0:00	192:00	224:00	Boroscope Inspection
	S	9/13/2019 0:00	9/13/2019 13:58	9/13/2019 0:00	9/13/2019 13:58	13:58	13:58	Borescope inspection
<b>E. W. Brown Unit 8 - Gas CT - 128 MW</b> In-service February 1995		No outages > or = 6 hours						
<b>E. W. Brown Unit 9 - Gas CT - 138 MW</b> In-service January 1995	S	5/13/2019 6:02	5/13/2019 19:20	5/13/2019 6:02	5/13/2019 19:20	13:18	13:18	Lube oil system - inspect and repair
	F			5/13/2019 19:20	5/14/2019 15:42		20:22	Lube Oil System - inspect and repair
	F			8/20/2019 15:54	8/22/2019 12:07		44:13	Ignition system repair
<b>E. W. Brown Unit 10 - Gas CT - 138 MW</b> In-service December 1995	F			9/10/2019 11:33	9/11/2019 11:13		23:40	Ignition system repair
<b>E. W. Brown Unit 11 - Gas CT - 128 MW</b> In-service May 1996		No outages > or = 6 hours						
<b>Haefling Unit 1 - Gas CT - 14 MW</b> In-service October 1970	S	5/9/2019 7:10	5/10/2019 9:57	5/9/2019 7:10	5/10/2019 9:57	26:47	26:47	Substation Maintenance
<b>Haefling Unit 2 - Gas CT - 14 MW</b> In-service October 1970	S	5/9/2019 7:10	5/10/2019 9:57	5/9/2019 7:10	5/10/2019 9:57	26:47	26:47	Substation Maintenance
<b>Paddys Run Unit 13 - Gas CT - 175 MW</b> In-service June 2001 Jointly owned with LG&ELG&E	S	5/4/2019 0:00	5/26/2019 0:00	5/4/2019 5:28	5/27/2019 0:00	528:00	546:32	Generator Maintenance and Vibration Monitoring System
	S	5/27/2019 0:00	5/28/2019 17:00	5/27/2019 0:00	5/28/2019 17:00	41:00	41:00	Generator Maintenance and Vibration Monitoring System
	F			5/28/2019 17:00	6/10/2019 7:32		302:32	Combustion Turbine/Generator Bearings
	F			6/13/2019 13:02	6/14/2019 8:56		19:54	Transmission System Voltage Issues
<b>Trimble County Unit 5 - Gas CT - 179 MW</b> In-service May 2002 Jointly owned with LG&E	S	6/21/2019 6:15	6/21/2019 12:59	6/21/2019 6:15	6/21/2019 12:59	6:44	6:44	Combustion Turbine Compressor Washing
<b>Trimble County Unit 6 - Gas CT - 179 MW</b> In-service May 2002 Jointly owned with LG&E	S	6/25/2019 5:11	6/25/2019 14:55	6/25/2019 5:11	6/25/2019 14:55	9:44	9:44	Hydraulic pump maintenance
	S	9/26/2019 8:16	9/26/2019 19:12	9/26/2019 8:16	9/26/2019 19:12	10:56	10:56	Hydraulic pump maintenance
	S	10/25/2019 20:05	10/29/2019 7:01	10/25/2019 20:05	10/29/2019 7:01	82:56	82:56	Combustion Turbine vibration balance correction

\*Actual outage dates and hours of duration include scheduled and forced outages.

<b>Trimble County Unit 7 - Gas CT - 179 MW</b> <b>In-service June 2004</b> <b>Jointly owned with LG&amp;E</b>	S	5/14/2019 5:10	5/14/2019 15:13	5/14/2019 5:10	5/14/2019 15:13	10:03	10:03	Combustion Turbine vibration investigation
	S	6/4/2019 6:15	6/4/2019 13:40	6/4/2019 6:15	6/4/2019 13:40	7:25	7:25	Combustion Turbine Compressor Washing
	S	9/14/2019 0:00	9/22/2019 0:00	9/16/2019 20:02	9/21/2019 7:00	192:00	106:58	Maintenance outage on switchyard system protection devices
<b>Trimble County Unit 8 - Gas CT - 179 MW</b> <b>In-service June 2004</b> <b>Jointly owned with LG&amp;E</b>	S	9/14/2019 0:00	9/29/2019 0:00	9/13/2019 22:16	9/29/2019 7:40	360:00	369:24	Exhaust Duct Repair/Refurbishment
<b>Trimble County Unit 9 - Gas CT - 179 MW</b> <b>In-service July 2004</b> <b>Jointly owned with LG&amp;E</b>	S	6/19/2019 6:24	6/19/2019 12:38	6/19/2019 6:24	6/19/2019 12:38	6:14	6:14	Combustion Turbine Compressor Washing
	F			9/14/2019 2:57	9/14/2019 10:45		7:48	Fuel piping and valves
<b>Trimble County Unit 10 - Gas CT - 179 MW</b> <b>In-service July 2004</b> <b>Jointly owned with LG&amp;E</b>	S	5/3/2019 5:15	5/3/2019 19:44	5/3/2019 5:15	5/3/2019 19:44	14:29	14:29	Lube Oil System Maintenance
	S	6/14/2019 6:40	6/14/2019 13:04	6/14/2019 6:40	6/14/2019 13:04	6:24	6:24	Compressor washing

\*Actual outage dates and hours of duration include scheduled and forced outages.