

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT



**THE EMPIRE ELECTRIC COMPANY,
d/b/a Liberty**

CASE NO. EA-2023-0131

*Jefferson City, Missouri
March 8, 2024*

*** Denotes Highly Confidential Information ***

**STAFF REPORT ON
THE EMPIRE ELECTRIC COMPANY,
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STAFF REPORT ON
THE EMPIRE DISTRICT ELECTRIC COMPANY,
d/b/a Liberty
Case No. EA-2023-0131

OVERVIEW/SUMMARY

On February 14, 2023, The Empire District Electric Company, d/b/a Liberty (“Liberty”) filed an application (“Application”) in Case No. EA-2023-0131 that seeks permission and approval, under Sections 393.170 RSMo., and Commission Rule 20 CSR 4240-20.045 for a certificate of convenience and necessity (“CCN”) authorizing Liberty to enhance the resiliency of its electric system by replacing Riverton Units 10 and 11. With the application, Liberty filed a motion for a protective order to protect information specific to the proposed units that may, if disclosed, put Liberty at a competitive disadvantage. The project is to be connected to the transmission system under the functional control of the Southwest Power Pool (“SPP”).

On May 9, 2023, Liberty filed a Motion for Stay of the Proceedings, citing time for Liberty to address issues with SPP regarding generation interconnection and provide additional information to the Staff of the Commission and other parties to this proceeding regarding the details of the Riverton Units 10 and 11 project. The Commission granted the Motion for Stay of the Proceedings on May 10, 2023.

On October 13, 2023, Liberty filed an amended application. On January 19, 2024, Liberty filed a second amended application.

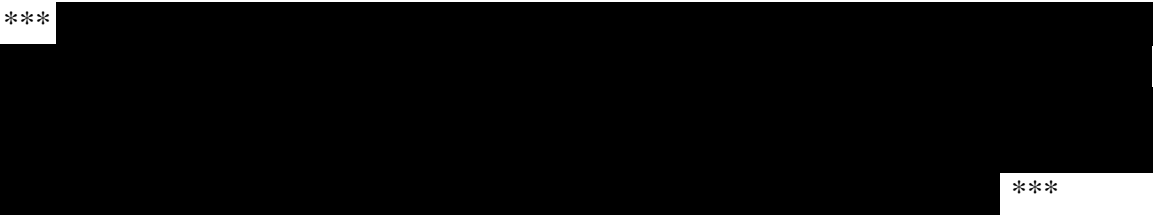
The Project is expected to be fully operational by July 2026.

Staff Expert/Witness: Shawn E. Lange, PE

Summary of Recommendations

Given the history that has taken place for Riverton 10, as further discussed below, Staff does not recommend the Commission grant Decisional Prudence in this case. Staff recommends the Commission grant Liberty a CCN to enhance the resiliency of its electric system by replacing Riverton Units 10 and 11 subject to the following conditions:

Recommended Conditions

1. Liberty shall finalize necessary agreements with Kansas Department of Health and Environment to not only tune both replacement units on all available operational fuels at the expected temperature extremes but also be able to operationally test both replacement units on multiple fuel types as needed to maintain operational effectiveness. Liberty shall provide Staff annual reports until necessary agreements are in place.
2. Liberty shall provide Staff annual reports for a period of three years on the winterization actions that have been taken and the anticipated effects of those actions.
3. Liberty shall provide Staff annual reports for a period of three years on agreements/negotiations that occur with natural gas and fuel oil suppliers to ensure that the gas supply to the restoration unit is prioritized appropriately.
4. Liberty shall provide Staff a report within 18 months on its internal decision-making policies. Liberty shall consider implementing policies designed to eliminate the potential of future indecision on the repair/replacement of necessary restoration capacity in the future.
5. ***


6. Liberty shall file in this docket updated Restoration Plans within 60 days of the units' In-Service date.
7. Liberty shall file in this docket as-built construction drawings within 60 days of the units' In-Service date.
8. Liberty shall file its updated winter readiness plan within 60 days of the units' In-Service date.
9. Liberty shall amend its CCN application if the project and/or the transmission line extends to property that is currently not included in the Riverton Power Plant boundaries.
10. Liberty shall provide the Replacement Impact Study, Reliability Assessment Study and Interconnection Facilities Study when completed.

Staff Expert/Witness: Shawn E. Lange, PE

APPLICATION REQUIREMENTS

Commission rule 20 CSR 4240-20.045 outlines the requirements for applications for certificates of convenience and necessity pursuant to Section 393.170.1 and 393.170.2, RSMo. According to Section (6) of the rule if the application is for authorization to construct an

asset under Section 393.170.1, RSMo. The application shall also include additional documentation/information as follows:

(A) A description of the proposed route or site of construction;

Liberty provided a description of the existing site in Paragraph 19 of the Application. Additionally, Liberty has provided an aerial view of its proposed site, including the planned layout of the new turbines, generators, and step-up transformer.¹ Therefore, the Company's application meets this requirement.

(B) A list of all electric, gas, and telephone conduit, wires, cables, and lines of regulated and nonregulated utilities, railroad tracks, and each underground facility, as defined in section 319.015, RSMo, which the proposed construction will cross;

Only Liberty-owned electric circuits and a natural gas line used by Liberty are located on the property. None of these circuits or lines cross the planned construction area.²

(C) A description of the plans, specifications, and estimated costs for the complete scope of the construction project that also clearly identifies what will be the operational features of the asset once it is fully operational and used for service;

While Liberty has provided Staff with factory specifications for the new gas turbines, as well as an aerial view of the site, Staff recommends a condition that Liberty also provide as-built construction drawings and specifications to Staff within 60 days of the new unit's In-Service date. The project is currently estimated to cost \$53 million.³ Staff witness Shawn E. Lange, PE discusses the new units' In-Service criteria, though the most notable operational features other than energy generation are the units' *** [REDACTED] ***.

(D) The projected beginning of construction date and the anticipated fully operational and used for service date of the asset;

Liberty plans to begin construction in the spring of 2025, though the exact date is contingent on when the Company receives approval and permitting from the Missouri Public Service Commission and Kansas Department of Health and Environment. The new units are planned to be operational and in service by July 2026.⁴

¹ From Staff Data Request No. 0055.

² Empire's Application, Paragraph 20.

³ EA-2023-0131 Staff Data Request Nos. 0019 and 0055, and Liberty's Second Amended Application Paragraph 58.

⁴ Paragraphs 51 and 53 of Empire's Application.

(E) A description of any common plant to be included in the construction project;

A liquid fuel storage tank, liquid fuel piping, natural gas piping, compressed air equipment, control cabling, an emergency generator, a combustion turbine water wash system, and a building will be considered common plant. The new assets will share a common generator step-up transformer. A short transmission line will tap into existing transmission lines and interconnect the new generators at the same position in the existing substation as the units to be retired.⁵

(F) Plans for financing the construction of the asset;

Liberty plans on using a bill of exchange or similar financial instrument, and if needed it will borrow from the Company's participation in its parent company, the Liberty Utilities Co.'s, money pool to finance the construction of the new units.⁶

(G) A description of how the proposed asset relates to the electric utility's adopted preferred plan under 4 CSR 240-22;

The planned units relate to Liberty's 2022 IRP in that Liberty identified a necessary replacement of 30 MW. Liberty chose to pursue combustion turbines of this capacity instead of the planned RICE⁷ units due to an analysis performed by Charles River Associates that installing combustion turbines would reduce the net present value of revenue requirement by \$6.3 million over the next 30 years.⁸

(H) An overview of the electric utility's plan for this project regarding competitive bidding, although competitive bidding is not required, for the design, engineering, procurement, construction management, and construction of the asset;

The model of turbine has already been selected, however, bidding is being used for other areas of project such as engineering, procurement, and construction and commissioning of the project. The project is planned to be managed by Liberty personnel with external engineering support.⁹

⁵ EA-2023-0131 Second Amended Application Paragraph 44 and Staff Data Request No. 0054.

⁶ From Paragraph 59 of Empire's Application.

⁷ RICE is Reciprocating Internal Combustion Engine.

⁸ Paragraphs 24 through 26 in Empire's Application.

⁹ EA-2023-0131 Second Amended Application Paragraph 62.

(I) An overview of plans for operating and maintaining an asset;

The new assets will be operated by Riverton Power Plant personnel, which have operated similar units, Riverton 10 and 11, in the past.¹⁰ Routine maintenance on the new units and any balance of plant assets will similarly be performed by the Riverton personnel. Major maintenance will be performed by the original equipment manufacturer's service personnel with which Liberty has a long-term service agreement.¹¹

(J) An overview of plans for restoration of safe and adequate service after significant, unplanned/forced outages of an asset; and

Liberty plans to manage any significant forced outage of one or both units in the same way that the Company manages State Line 1 or Energy Center outages.¹² Liberty has provided Staff with its current restoration plan¹³ and describes the steps the Company must take before it can update the Restoration Plan to include the new units. These include technical study simulations and real world tests.¹⁴ Staff recommends the Commission condition this CCN on Liberty providing updated Restoration Plans within 60 days of the new units' In-service date.

(K) An affidavit or other verified certification of compliance with the following notice requirements to landowners directly affected by electric transmission line routes or transmission substation location

All proposed construction for the units will be within the existing Riverton Power Plant property boundaries.¹⁵ Only a short transmission line is needed to connect the new units into the preexisting substation that is also on this property.¹⁶ Therefore, Staff agrees with Liberty's assessment that an affidavit regarding notice requirements is not required as no landowners will be directly affected by electric transmission lines associated with the project.

Staff Expert/Witness: Brodrick Niemeier

Overview of Project

The current Riverton Power Plant site is comprised of an approximately 300 MW (nameplate) gas-fired electric generating facility comprised of three units: (1) Riverton Unit 10,

¹⁰ EA-2023-0131 Second Amended Application Paragraph 45.

¹¹ EA-2023-0131 Second Amended Application Paragraph 46.

¹² EA-2023-0131 Second Amended Application Paragraph 47.

¹³ ER-2021-0312 Staff Data Request Response 0022.

¹⁴ EA-2023-0131 Staff Data Request Response 0056.

¹⁵ EA-2023-0131 Second Amended Application Paragraph 21.

¹⁶ EA-2023-0131 Second Amended Application Paragraph 44.

a 16.3 MW simple cycle natural gas facility placed in service in December 1988; (2) Riverton Unit 11, a 16.3 MW simple cycle natural gas facility placed in service in December 1988; and (3) Riverton Unit 12, a 267.6 MW combined cycle natural gas facility placed in service in June 2016.¹⁷

Riverton Unit 10 and Riverton Unit 11 were subjected to inspection by borescope on May 24, 2023. During this inspection, measurements of the blade migration in Unit 11 confirmed that the migration had progressed to the point that repairs would be required. The borescope inspection of Unit 10 also identified blade migration, but not to a level requiring correction.¹⁸

Liberty is proposing to replace Riverton Unit 10 and Riverton Unit 11 each with a new generator. Each generator has a nominal net output of 13.3 MW. The turbines are fast-starting and are dual fuel capable, providing resiliency for periods of natural gas scarcity and the capability to start when no off-site power is available.¹⁹

It is expected that Liberty will begin the physical replacement of the generating units in the spring of 2025.²⁰ Construction and commissioning is expected to take approximately one year, making the new assets available for service in July 2026.²¹

Interconnection

The new assets will share a common generator step-up transformer. A short transmission line will tap into existing transmission lines and interconnect the new generators at the same position in the existing substation as the units to be retired.²²

The Southwest Power Pool has procedures in place for the replacements of generating facilities. These procedures are in place, in part to allow for a more expedient replacement of a generating unit, if these procedures are not followed, the utility would need to retire or repair the existing generating unit and then follow the Generator Interconnection process for SPP to determine the cost of interconnecting, which may run the risk of additional costs of interconnection depending on what interconnection requests are higher in the queue as well as the time necessary to complete the Generator Interconnection Procedure.

¹⁷ EA-2023-0131 Second Amended Application Paragraph 27.

¹⁸ EA-2023-0131 Second Amended Application Paragraph 33.

¹⁹ EA-2023-0131 Second Amended Application Paragraph 40.

²⁰ EA-2023-0131 Second Amended Application Paragraph 51.

²¹ EA-2023-0131 Second Amended Application Paragraph 53.

²² EA-2023-0131 Second Amended Application Paragraph 30.

Attachment V, Section 3.9.1(ii) states:

The request for Generating Facility Replacement must be submitted to the Transmission Provider by the Interconnection Customer for its Existing Generating Facility at least one (1) year prior to the date that the Existing Generating Facility will cease operation or up to one year after a unit is determined to be in forced outage. The request shall include the planned or actual date of cessation of operation for the Existing Generating Facility and the expected Commercial Operation Date for the Replacement Generating Facility.

The repair of Riverton 10 is, at least in part, required if Liberty is to comply with requirement attachment V section 3.9.1(ii). If Riverton 10 is repaired and is no longer in an outage, Liberty may then designate that unit for replacement.

Liberty requested a waiver of section 3.9.1(ii) from the Federal Energy Regulatory Commission (“FERC”) in ER23-928-001. On March 29, 2023, FERC denied Liberty’s request for a waiver of section 3.9.1(ii). On April 28, 2023, Liberty filed a request for rehearing of the Waiver Order. FERC, in its determination issued July 12, 2023, determined:²³

Empire missed the Tariff deadline to submit a generating facility replacement request. Riverton Unit 10 was determined to be in forced outage on February 8, 2021. Under the terms of the Tariff, Empire had “up to one year” from that date (i.e., by February 8, 2022) to submit its generating facility replacement request. Empire neither submitted a generating facility replacement request nor requested that the Commission grant a prospective waiver before February 8, 2022. Because Empire missed the deadline imposed by the Tariff, the waiver of the one-year deadline it seeks here is retroactive in nature and, as such, is prohibited by the filed rate doctrine.

The Generating Facility Replacement Requests (GFRR) requires certain studies be completed.

Those studies include:

- The Replacement Impact Study will include analyses to determine if the Replacement Generating Facility has a material adverse impact on the Transmission System when compared to the Existing Generating Facility. The Replacement Impact Study may include steady-state (thermal/voltage), reactive power, short circuit/fault duty, and stability analyses, as necessary, to ensure that required reliability conditions are studied.
- The Reliability Assessment Study for the time period between the date that the Existing Generating Facility ceases commercial operations and the Commercial Operation Date

²³ ER23-928-001 ORDER ADDRESSING ARGUMENTS RAISED ON REHEARING Issued July 12, 2023.

of the Replacement Generating Facility shall evaluate the performance of the Transmission System to determine if thermal and/or voltage violations of applicable NERC Standards and applicable planning criteria are caused by removing the Existing Generating Facility from service prior to the Commercial Operation Date of the Replacement Generating Facility.

- Interconnection Facilities Study focusing on the Interconnection Facilities for the Replacement Generating Facility will start, if the Transmission Provider determines such a study is necessary, upon Interconnection Customer's notice to proceed to the Transmission Provider after completion of the Replacement Impact Study and the Reliability Assessment Study.

Liberty was not able to designate Riverton 10 as a unit to be replaced because of the one-year deadline further described in Michael L. Rush's section. When Riverton 10 is taken out of outage designation, it can be designated for replacement. When Riverton 10 and 11 are designated for replacement through the SPP GFRR, that will trigger the additional studies spelled out in the GFRR. Staff recommends the Commission include a condition requiring Liberty to provide the Replacement Impact Study, Reliability Assessment Study and Interconnection Facilities Study when completed.

Included in the project is a short transmission line that will tap into the existing transmission lines and interconnect the new generators at the same position in the existing substation as Riverton 10 and Riverton 11.²⁴

Liberty has indicated that all proposed construction will be within the existing Riverton Power Plant property boundary, therefore no landowners were required to be given notice.²⁵

Staff recommends the Commission include a condition requiring Liberty to amend its CCN application if the project and/or the transmission line extends to property that is currently not included in the Riverton Power Plant boundaries.

Staff Expert/Witness: Shawn E. Lange, PE

TARTAN

In In the Matter of the Application of Tartan Energy Company, LLC, d/b/a Southern Missouri Gas Company, 3 Mo P.S.C.3d 173, 177 (1994), the Commission's Order listed five

²⁴ EA-2023-0131 Second Amended Application Paragraph 44.

²⁵ EA-2023-0131, Second Amended Application Paragraph 21.

criteria to include in the consideration when making a determination on whether a utility’s proposal meets the standard of being “necessary or convenient for the public service.”²⁶ Those factors are:

1. Is the service needed?
2. Is the applicant qualified to provide the service?
3. Does the applicant have the financial ability to provide the service?
4. Is the applicant’s proposal economically feasible?
5. Does the service promote the public interest?

These factors are an over-arching general framework to organize discussion of the evidence in review of the various types of CCN applications that come before the Commission. However, each CCN case must be evaluated in light of the regulatory context and operating circumstances of the project. The Commission’s inquiry does not end at a surface level Tartan analysis. To fully ensure ratepayers are only paying for those projects that are just, reasonable, and necessary, Staff suggests consideration of the following questions, in order to evaluate the evidence to determine if each Tartan Factor has been met. As stated, each application needs to be evaluated in the specific context and circumstances of that utility, with the specific operating characteristics and costs of the project.

Certain general questions are asked in any application, such as:

- Does the Commission have jurisdiction over the Applicant?
- Very specifically, what authority is requested, and does the Commission have jurisdiction to grant the authority requested?
- Has the Applicant met all CCN rule requirements?
- Has the Applicant met all other relevant filing requirements?

²⁶ This enunciation of these factors is an outgrowth of case law dating back decades, as summarized and clarified in language included in *State ex rel. Intercon Gas, Inc. v. Pub. Serv. Commn. of Missouri*, 848 S.W.2d 593, 597–98 (Mo. App. W. Dist. 1993), which stated:

The PSC has authority to grant certificates of convenience and necessity when it is determined after due hearing that construction is “necessary or convenient for the public service.” Section 393.170.3. The term “necessity” does not mean “essential” or “absolutely indispensable”, but that an additional service would be an improvement justifying its cost. *State ex rel. Beaufort Transfer Co. v. Clark*, 504 S.W.2d at 219. Additionally, what is necessary and convenient encompasses regulation of monopoly for destructive competition, prevention of undesirable competition, and prevention of duplication of service. *State ex rel. Public Water Supply Dist. No. 8 v. Public Serv. Comm’n*, 600 S.W.2d 147, 154 (Mo.App.1980). The safety and adequacy of facilities are proper criteria in evaluating necessity and convenience as are the relative experience and reliability of competing suppliers. *State ex rel. Ozark Elec. Coop. v. Public Serv. Comm’n*, 527 S.W.2d 390, 394 (Mo.App.1975). Furthermore, it is within the discretion of the Public Service Commission to determine when the evidence indicates the public interest would be served in the award of the certificate. *Id.* at 392.

Then Staff considers a more in-depth evaluation including the questions known as the Tartan Factors:

- 1. Is the service needed?**
 - a. Is the project both important to the public convenience and desirable for the public welfare?
 - b. Or, is the project effectively a necessity because the lack of the service is such an inconvenience?
- 2. Is the applicant qualified to provide the service?**
 - a. Does the Applicant have the operational capability to construct (or purchase), own, operate, and maintain each project?
- 3. Does the applicant have the financial ability to provide the service?**
 - a. Does the Applicant have the financial ability to construct (or purchase), own, operate, and maintain each project?
- 4. Is the applicant's proposal economically feasible?**
 - a. Is the project of sufficient importance to warrant the expense of making it?
 - b. Or, is the project of such an improvement as to justify or warrant the expense of making the improvement?
- 5. Does the service promote the public interest?**
 - a. Has the Applicant provided sufficient evidence for the Commission to conclude:
 1. The Applicant is managing the expense of the project despite its importance or necessity;
 2. The Applicant has selected a reasonable solution to the necessity identified, including selection of the type of facility, the operational characteristics of the facility, the acquisition of the facility, and the acquisition of fuel and transmission necessary to use the projects to meet the need identified.
 - b. Are there conditions or mechanisms that can be imposed to overcome any deficits in the answers to the prior questions?
 - c. Has the Applicant presented an adequate direct case to demonstrate each question enumerated?

However, as many of the questions, and indeed in the traditional Tartan Factors, interdepend on the answers and evidence of other factors, it can be difficult discuss, for instance, if a project is economically feasible, without looking at what need the utility purports to have and the suitability of the project to meet that need. For example, a particular solar project may be the most economically attractive unit on a per kWh basis, but if the purported need is capacity during winter peak hours, and the solar unit will provide no useful value in meeting that capacity or energy shortfall, it is not economically feasible for customers to pay for that facility for that purpose. Finally, how to respond to many of these questions, and determine the best way to analyze

and evaluate what answers the evidence will lead to, is largely dependent on the unique circumstances of the application, the utility, and the current operating and regulatory environment. This is implicitly recognized in the statute, and court cases²⁷ interpreting the statute, allowing for both strictly essential and mandated necessary projects, as well as those projects that are convenient, and provide such benefit that improvement is justified. In other words, is the project of sufficient importance, due to legal or regulatory requirements, or essential to the safe and reliable operation of the utility's system, to warrant the expense of making it? (i.e., necessary)²⁸ Or, if not mandated or essential to utility operations, is the project so convenient to be necessary and warrant the expense of making such an improvement? (i.e., convenient)²⁹

For instance, a *necessary* generating facility may be more usefully evaluated in terms of, is this project presented in the application an economically feasible way of meeting the identified need and promoting the public interest. However, a generating plant premised on its inclusion in speculative integrated resource planning results modeled on generic resources, or on its value to simply sell more energy, is not necessary and should have stricter scrutiny on questions of need and economic feasibility to determine if this project is so *convenient* it puts customers in a better position than if they were not paying for the plant at all.

All legal examinations are conducted by Staff counsel. As to the technical examination of the Tartan Factors, Staff witness Brodrick Niemeier addresses if Liberty is qualified to own, operate, control, and manage the facilities and provide the service. Staff witness Seoung Joun Won, PhD addresses the financial ability of Liberty to construct the project. Staff witness Justin Tevie addresses the economic feasibility for the project. Staff witnesses Michael L. Rush, PE and Shawn E. Lange, PE address the consideration of need for the project.

²⁷ “[The Kansas City Court of Appeals, Missouri] in *State ex rel. Missouri, Kansas & Oklahoma Coach Lines v. Public Service Commission*, 238 Mo.App. 317, 179 S.W.2d 132, loc. cit. 136, made the following comment on the question: “Necessity’ as used in the phrase ‘convenience and necessity’, as applied to regulations by Public Service Commissions, does not mean essential or absolutely indispensable, but is used in the sense that the motor vehicle service would be such an improvement as to justify or warrant the expense of making the improvement; that the inconvenience of the public occasioned by the lack of motor vehicle transportation is so great as to amount to a necessity. *Chicago, R. I. & P. R. Co. v. State*, 123 Okl. 190, 252 P. 849. ‘Any improvement which is highly important to the public convenience and desirable for the public welfare may be regarded as necessary. If it is of sufficient importance to warrant the expense of making it, it is a public necessity. * * * Inconvenience may be so great as to amount to necessity’. *Wabash Chester & Western R. R. Co. v. Commerce Commission ex rel.*, 309 Ill. 412, 418, 141 N.E. 212, 214’. *State ex rel. Transport Delivery Co. v. Burton*, 317 S.W.2d 661, 664 (Mo. App. 1958).

²⁸ *Id.*

²⁹ *Id.*

Is the service needed?

In evaluating whether Liberty has sufficiently demonstrated that the Riverton project is needed Staff considered the question: Is the project both important to the public convenience and desirable for the public welfare?

Upon Staff's review of the evidence presented, Liberty has met the need factor, primarily based on the identified need to *** [REDACTED] ***.

FERC Restoration Requirements

*** [REDACTED]

[REDACTED] 30 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 31 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] ***

30 *** [REDACTED] ***

31 <https://www.nerc.com/pa/Stand/Reliability Standards/EOP-005-3.pdf>.

As part of a data request, Liberty has provided *** [REDACTED]

[REDACTED] ³² [REDACTED]

[REDACTED] *** Liberty is in compliance with this requirement.

Additionally, FERC Requirement EOP-006-2: System Restoration Coordination³³ requires that each restoration plan shall be reviewed within 13 calendar months of the last review. Based on a review of the recent dates included in the Liberty Restoration Plan revision history, Liberty is also compliant with this requirement.

History of the Repair or Replacement of * [REDACTED]**

[REDACTED] ***

On February 8, 2021, *** [REDACTED]

[REDACTED] ³⁴ [REDACTED]

[REDACTED]

[REDACTED] ³⁵ [REDACTED] ***

On April 1, 2021, Liberty filed a request for variances concerning the Integrated Resource Plan (IRP) process with the Missouri Public Service Commission ("Commission"), Case No. EO-2021-0331. Included in the IRP was the retirement of Riverton 10 and 11. The retirement was based on the age of the generating units and the necessity of *** [REDACTED] ***. These two would be directly replaced with 30MW of new, more reliable dual-fuel units *** [REDACTED] ***. The IRP was filed on April 1, 2022.

During the Missouri IRP process, Liberty was considering and ultimately decided that replacement of the then inoperable Riverton 10 was the preferable option. However, the Southwest Power Pool Tariff³⁶ under which Liberty operates has certain requirements for Generating Facility Replacement Requests (GFRR) for units under a forced outage contained within section 3.9.1, which are summarized as follows:

³² *** [REDACTED] ***

³³ <https://www.nerc.com/pa/Stand/Reliability Standards/EOP-006-2.pdf>.

³⁴ The Empire District Electric Company, d/b/a Liberty Second amended CCN Application, Paragraph 30.

³⁵ Ibid. 3, page 3.

³⁶ [SPP Tariff - Generator Interconnection Procedures - Attachment V, Section 3.](#)

- (1) Like for like unit replacement as it relates to the interconnection point and voltage.
- (2) A replacement application for a generating asset that experienced a forced outage must be made within one year of the forced outage.
- (3) A new queue position shall be assigned for the asset (as if it were a new generation) if the replacement facility requires greater interconnection services than that of the existing unit.
- (4) If the replacement asset requires less interconnection services than that of the existing unit, interconnection service may be granted at the reduced rate.
- (5) The replacement request can be modified at any time before the evaluation process is completed.

Liberty filed an untimely application to SPP for the replacement of Riverton 10 on January 23, 2023. The filing satisfied most of the requirements except for the ‘within one year’ for units under a forced outage. Liberty concurrently filed a request for a variance to the SPP tariff with FERC as the replacement request not timely. Liberty claimed to have been unable to file in a timely manner due to the ongoing IRP process with the Commission. FERC denied the variance on March 29, 2023, and also denied the request for rehearing on July 12, 2023, which was subsequently filed. SPP intervened in the FERC docket but took no position on the merits of the variance but also stated that “SPP is very supportive of its Load Responsible Entities taking any steps necessary for it to meet the Resource Adequacy Requirements.”³⁷

To complicate matters further, on April 18, 2023, Riverton 11 was *** [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] *** While the Liberty restoration plan does contemplate Liberty “contact[ing] neighboring entities for assistance in providing *** [REDACTED] ³⁸ [REDACTED]

[REDACTED] *** this is hardly an optimal situation should such a restoration effort be necessary - especially if the neighboring entities were engaged in their own restoration process.

³⁷ [SPP Intervention and Comments in ER23-928.pdf](#)

³⁸ Ibid. 3, page 14.

So, as of mid-July 2023, Liberty had been denied the SPP tariff variance by FERC twice, Riverton 10 was in a forced outage status, and Riverton 11 *** [REDACTED] [REDACTED] *** Liberty proceeded to complete an estimate of the cost to repair both Riverton 10 and 11. Subsequently, it was determined that the cost of repairing Riverton 10 was less than that of repairing Riverton 11 and as such, on August 14, 2023, Liberty made the decision to repair Riverton 10. The decision to repair Riverton 10 accomplished several things once the repairs were completed on January 11, 2024³⁹ such as:

- (1) Riverton 10 can once again be relied upon as a capacity resource
*** [REDACTED] ***
- (2) The forced outage status of Riverton 10 would end resetting the SPP GFRR timeclock
- (3) The one-year SPP generator replacement requirement would be moot
- (4) A new SPP GFRR application can be timely filed under tariff section 3.9.1

While Staff agrees the decision to repair Riverton 10 was correct given the situation Liberty found itself in as of July 2023, it also believes that the situation was one of Liberty’s own making, given the failure to follow the SPP GFRR for a unit in a forced outage status. While it can be argued that the ultimate result of the concurrently proceeding IRP process was uncertain as to the future of both Riverton 10 and 11, the SPP GFRR tariff 3.9.1.1 does contemplate such by stating that “the request for [a] Replacement Generating Facility can be modified any time before the evaluation process is complete.”⁴⁰

Lessons from “Winter Storm Uri”, February 2021

*** [REDACTED]

[REDACTED] 41 [REDACTED]

[REDACTED] 42 [REDACTED]

³⁹ Ibid. 5, page 8.

⁴⁰ Ibid. 7, page 39.

⁴¹ *** [REDACTED] ***

⁴² [FERC-NERC-Regional Entity Joint Feb 2021 Cold Weather Outages in Texas and the South-Central US Staff Report.](#)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] ***

As a review of the CCN and its impact on system resiliency and restoration, Staff will address the FERC requirements and recommendations resulting from the February 2021 experience as well as the timeline associated with the events that precipitated the CCN application.

Staff Expert/Witness: Michael L. Rush, PE

In addition to the *** [REDACTED] *** discussed above, Liberty’s application asserts a need for capacity.

In July 2022, based on the 2021 Loss of Load Expectation (“LOLE”) study, the SPP Board of Directors and the Regional State Committee (“RSC”) approved an increase in the Planning Reserve Margin (“PRM”) from 12% to 15% for the 2023 Summer Season.⁴³ The Resource Adequacy Requirement calculation and fuel type summaries for the 2023 Summer Season for Liberty is shown below:⁴⁴

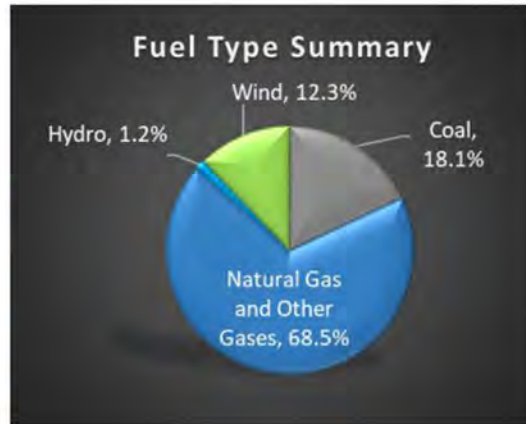
⁴³ See Board of Directors and Members Committee Meeting Minutes, dated July 26, 2022, at Agenda Item 3.c.ii posted at: https://www.spp.org/documents/67635/bod_mc%20minutes%202022%2007%2026.pdf.

See also RSC Meeting Minutes, dated July 25, 2022, at Agenda Item 5.E posted at: <https://www.spp.org/documents/67602/rsc%20minutes%20july%2025,%202022%20v2.pdf>.

⁴⁴ <https://www.spp.org/documents/69529/2023%20spp%20june%20resource%20adequacy%20report.pdf>.

EMPIRE DISTRICT ELECTRIC COMPANY (LIBERTY UTILITIES)

Capacity Summary	Unit	2023
Capacity Resources	MW	1,309
Firm Capacity Purchases	MW	67
Deliverable Capacity Purchases	MW	0
Firm Capacity Sales	MW	78
Deliverable Capacity Sales	MW	0
External Firm Power Purchases	MW	0
External Firm Power Sales	MW	0
Confirmed Retirements	MW	0
Total Capacity	MW	1,298
Demand Summary		
Forecasted Peak Demand	MW	1,102
Internal Firm Power Sales	MW	0
Internal Firm Power Purchases	MW	0
Controllable and Dispatchable DR	MW	0
Net Peak Demand	MW	1,102
Requirements Summary		
Resource Adequacy Requirement	MW	1,267
Excess Capacity	MW	30
Deficient Capacity		
LRE planning reserve margin	%	17.76
Planning Reserve Margin	%	15.00



Staff also reviewed Liberty’s capacity analysis in the 2022 Integrated Resource Plan (“IRP”). *** [REDACTED] [REDACTED] ***⁴⁵ Construction and commissioning duration is expected to be approximately one year, rendering the new assets available for service in July 2026.⁴⁶ In summary, these new generating units will contribute accredited capacity in July 2026 and beyond. Staff will review the prudence of any short-term contracts during the period of *** [REDACTED] *** in Liberty’s next rate case(s).

Staff Expert/Witness: Shawn E. Lange, PE

Is the Applicant qualified to provide the service?

Liberty is a Kansas based electric utility that has operated in Missouri since it was incorporated, as Empire District Electric Company, in 1909. It has operated similar combustion turbines at the Riverton facility for over 30 years, Riverton 10 and 11 since 1988. These units are set to be replaced by the proposed units *** [REDACTED] [REDACTED] ***. Further, Liberty has managed the addition of several large generating units and has managed several large-scale environmental modification

⁴⁵ Liberty response to Staff Data Request No. 0011.
⁴⁶ EA-2023-0131 Second Amended Application Paragraph 53.

projects made to its existing units. In the past, Liberty has had issues with Riverton 10's reliable operation, as further explained by Staff witness Michael L. Rush, PE. In summary, Staff concludes that Liberty is qualified to construct, operate and maintain these two new combustion turbines.

Staff Expert/Witness: Brodrick Niemeier

Does the Applicant have the financial ability to provide the service?

Staff presents evidence and provides a recommendation regarding the financial ability of The Empire District Electric Company, d/b/a Liberty ("Liberty" or the "Company") to install two combustion turbine generators to replace existing combustion turbine generators, Riverton Unit 10 and Riverton Unit 11 (the "Project").⁴⁷ The estimated cost for the complete scope of the construction project is \$53 million.⁴⁸ Major maintenance is to be performed on intervals defined in the generating units' operation and maintenance manuals and will be performed by the original equipment manufacturer's service personnel under a long-term service agreement.⁴⁹

According to the Second Amended Application, the project is expected to be 'balance sheet financed' or financed off balance sheet via a bill of exchange or similar financial instrument.⁵⁰

In the response to Staff's data request, Liberty defined the following:

"Balance sheet finance means the Company uses its cash generated from operations to finance the project. Any cash shortfalls would be made up with borrowings from the Company's participation in the money pool." and

"A bill of exchange is a document that obliges a buyer to timely pay a seller for purchased goods. The buyer promises to pay on demand or on any date on which both parties agree. The use of a bill of exchange for procurement of major equipment may result in lower overall financing costs for the purchase of that equipment." and

"A promissory note would be a similar financial instrument to a bill of exchange. A promissory note is issued by a debtor that promises to pay an amount of money in a given time."⁵¹

⁴⁷ Paragraph 1, The Second Amended Application.

⁴⁸ Paragraph 58, The Second Amended Application.

⁴⁹ Paragraph 46, The Second Amended Application.

⁵⁰ Paragraph 59, The Second Amended Application.

⁵¹ Staff's Data Request No. 0004.

In addition, Liberty will use its cash generated from operations to finance the Project and any cash shortfalls would be made up with borrowings from the Company's participation in the money pool.⁵² In the Second Amended Application, Liberty stated "The final financing decision will depend on market conditions at the time of the project funding and will be based on providing the lowest customer rate impact."⁵³ In other words, the financing option having the lowest customer rate impact would be the best option.⁵⁴

In the Second Amended Application, without providing any evidence, Liberty states "Liberty is qualified and has the financial ability to operate the new assets."⁵⁵ According to the response to Staff's data request, the proposed transaction does not materially change the credit metrics of Liberty.⁵⁶ For example, Liberty expects the pro forma funds from operations ("FFO") to interest expense ratio ("FFO Interest Coverage") will decrease to *** [REDACTED] ***x from *** [REDACTED] ***x, due to the Project.⁵⁷ Because before and after FFO Interest Coverage ratios both indicate an intermediate financial risk profile, it is true that Liberty's credit risk will not be changed by the Project.⁵⁸).

With consideration of Liberty's financial capacity, the Applicant has the financial ability to provide the service. Standard & Poor's ("S&P") expects Liberty will have capital expenditures averaging approximately \$300 million per year through 2025.⁵⁹ Liberty is a subsidiary of Liberty Utilities Co. ("LUCo"), which is a subsidiary of Algonquin Power & Utilities Corporation ("APUC").⁶⁰ S&P reports APUC's average availability under its revolving credit facility is about \$1.8 billion as of June 30, 2022 and expects APUC will have capital expenditures averaging approximately \$1.5 billion per year through 2024.⁶¹ In addition, Liberty has about \$270 million of estimated cash FFO.⁶² S&P rated both Liberty and APUC as investment grade "BBB", while Moody's rated Liberty as "Baa1".⁶³ Considering the fact that the estimated cost for the complete scope of the construction project is \$53 million, which is approximately 20% of the overall

⁵² Paragraph 59, The Second Amended Application.

⁵³ Paragraph 60, The Second Amended Application.

⁵⁴ Staff's Data Request No. 0005, and Paragraph 45, The Amended Application.

⁵⁵ Paragraph 63, The Second Amended Application.

⁵⁶ Staff' Data Request No. 0006.

⁵⁷ Staff' Data Request No. 0002.1.

⁵⁸ S&P, Methodology: Business Risk / Financial Risk Matrix Expended.

⁵⁹ Empire District Electric Co. Ratings Score Snapshot, RatingsDirect, S&P Global Ratings. November 2, 2023.

⁶⁰ Paragraph 55, The Second Amended Application.

⁶¹ APUC. Ratings Score Snapshot, RatingsDirect, S&P Global Ratings. October 31, 2022.

⁶² Empire District Electric Co. Ratings Score Snapshot, RatingsDirect, S&P Global Ratings. November 2, 2023.

⁶³ Credit Ratings, S&P Capital IQ Pro.

expected annual capital spending through 2025, it is reasonable to conclude that Liberty has the financial ability to enhance the system resiliency of its electric system by replacing Riverton Units 10 and 11.

Staff Expert/Witness: Seoung Joun Won, PhD

Is the Applicant's proposal economically feasible?

Liberty asserts that the new assets will consume approximately 37 percent less fuel per kWh generated (10,906 Btu/kWh) than the units they will replace⁶⁴ making them more efficient than those assets.

Liberty estimates the cost for the complete scope of the project to be \$53 million.⁶⁵ In the interim, Liberty prepared estimates to repair Units 10 and 11. It proceeded with the repair of Unit 10 because its cost was less than that of Unit 11.⁶⁶ Repairs on Unit 10 were completed on January 11, 2024 and Unit 10 is now operational.

The Company contracted the services of Black and Veatch to conduct a comprehensive study of several generating units, including simple-cycle combustion turbines and batteries. The study concluded that the proposed assets would meet the needs of the Company at least cost.

From the foregoing discussion by Staff witness Michael L. Rush, PE, it is reasonable to assume that the project is of sufficient importance to warrant the expense of making it. It is also reasonable to assume that Liberty has selected a reasonable solution to the necessity identified, including selection of the type of facility, the operational characteristics of the facility, the acquisition of the facility, and the acquisition of fuel and transmission necessary to use the projects to meet the need identified. Therefore, Liberty has satisfied the economic feasibility factor.

Staff Expert/Witness: Justin Tevie

Does the service promote the public interest?

As stated in the Commission Report and Order on Remand in the EA-2016-0358 case:

The public interest is a matter of policy to be determined by the Commission. It is within the discretion of the Commission to determine when the evidence indicates the public interest would be served.⁶⁷

⁶⁴ Paragraph 43, Second Amended Application.

⁶⁵ Paragraph 58, Second Amended Application.

⁶⁶ Paragraph 35, Second Amended Application.

⁶⁷ EA-2016-0358 Report and Order on Remand page 45.

Staff's public interest assessment in this case involves the evaluation of all other Tartan Criteria: need for the project, its economic feasibility, the qualifications and financial ability of the entity requesting to construct and operate a project. Staff considers the evaluation of the separate Tartan criteria and whether, on balance, the project promotes the public interest. Additionally, Staff reviews the project and whether there are any considerations not covered by the other Tartan Criteria that should be considered in the public interest assessment.

This section will discuss other considerations and Staff recommendations not covered by the other Tartan Criteria, including winter operations, maintenance, and in-service testing.

Staff Expert/Witness: Shawn E. Lange, PE

Operating Plans and Winter Operations

Liberty plans to use Riverton personnel for the day to day operation and maintenance of the units. Also, natural gas will be the main fuel source, while fuel oil will be kept on site as a backup fuel. Overall, Liberty plans to operate the new units very similarly to Units 10 and 11, the units they are replacing. Liberty does plan to have the ability to more thoroughly tune and test the new units, especially while using fuel oil. The stored fuel oil, as well as the turbines, are planned to be adjusted and tuned to ensure reliability during all weather conditions.

In paragraph 41 of the most recent amended Application, Liberty has confirmed that both units' minimum design temperature will be -13.6 degrees Fahrenheit. These turbines will also be included in Liberty's current Riverton Plant Cold Weather Plan, which the Company has provided.⁶⁸ According to NERC's EOP-011-2, R7.3, generating units' operating cold weather data, including limitations such as their capability and availability, fuel supply concerns, fuel switching capabilities, and environmental constraints, must be included in the owner's cold weather plan. As the two units have not yet been constructed, much of this information is not yet available. Staff recommends the Commission include in any order granting a CCN that Liberty provide a copy of the updated Cold Weather Plan, which includes the new units, within 60 days of the units' In-Service date.

Staff Expert/Witness: Brodrick Niemeier

⁶⁸ EA-2023-0131 Staff Data Request Response 0012.1.

Maintenance and Forced Outages

Routine maintenance for the new turbines at Riverton will be performed by Riverton personnel. Major maintenance will be performed by the equipment manufacturer, as Liberty has a long-term service agreement with them. Liberty has opted for two smaller *** [REDACTED] *** to minimize the risks posed by a single larger unit experiencing an outage. Riverton has provided its current Restoration Plan in previous cases,⁶⁹ and has explained that technical study simulations and real-world tests must be performed before the Restoration Plan can be updated to include the new units, however, the new plan is expected to be substantially similar to the current plan. Above, Staff recommends the Commission condition the CCN on Liberty filing an updated Restoration Plan to be provided within 60 days of the units' in-service date.

Staff Expert/Witness: Brodrick Niemeier

Fuel Availability

Liberty's application states:

The turbines are fast-starting and are dual fuel capable, providing resiliency for periods of natural gas scarcity and the capability to start when no off-site power is available. Since the turbines are dual fuel capable, they are capable of operating on natural gas or fuel oil. The turbines will operate with natural gas as the primary fuel source and have fuel oil as a backup. Liberty has multiple suppliers of fuel oil and volumes are purchased on the capacity and inventory onsite to maintain run-time targets.⁷⁰

The Company is still in the process of determining the backup fuel options based on the operating requirements of the manufacturer and the operating conditions of the state regulated air permit. Once these requirements have been determined, the current volumes of firm natural gas transport capacity will be evaluated, including backup fuel capabilities, to ensure reliable operation of the proposed generating units. The Company has multiple suppliers of fuel oil and volumes are purchased based on the capacity and inventory onsite to maintain run-time targets. The Company will determine the volume of on-site backup fuel capacity after the state regulated air permit is obtained.⁷¹

Liberty has indicated that they are implementing lessons learned during Winter Storm Uri for this site in planning the proposed units. Liberty states:

⁶⁹ ER-2021-0312 Staff Data Request Response 0022.

⁷⁰ Liberty EA-2023-0131 Application Paragraph 26.

⁷¹ Liberty response to Staff Data Request No. 0003.

With respect to fuel, Liberty will implement improvements to make sure that liquid fuels do not gel and are delivered to generating units at or above the required temperature for ignition. Options under consideration include switching from fuel oil to a liquid fuel that performs better in cold weather or installing heat trace and insulation on above grade fuel oil piping.⁷²

Staff Expert/Witness: Shawn E. Lange, PE

In-service Testing

In-service criteria are a set of operational tests or operational requirements developed by the Staff to determine whether a new unit is “fully operational and used for service.”

The phrase “fully operational and used for service” comes from Section 393.135, RSMo. 2000, a statute that was adopted by initiative, Proposition No. 1, on November 2, 1976. Section 393.135, RSMo. 2000, provides as follows:

Any charge made or demanded by an electrical corporation for service, or in connection therewith, which is based on the costs of construction in progress upon any existing or new facility of the electrical corporation, or any other cost associated with owning, operating, maintaining, or financing any property before it is **fully operational and used for service**, is unjust and unreasonable, and is prohibited. [Emphasis added.]

Staff prefers to have in-service criteria that the parties can agree to prior to the case(s) in which the plant is put into rate base. In this case, Liberty provided Staff with the in-service criteria they are proposing to use for the proposed project in the confidential response to Staff Data Request No. 0017. Staff is in agreement that the in-service criteria is appropriate and should be used in a future case to determine whether the project be considered fully operational and used for service. These criteria are listed in Highly Confidential Attachment SEL-1. Staff recommends that the Commission note the in-service criteria contained in Highly Confidential Attachment SEL-1 are appropriate for use in a future case to determine whether the Riverton project is in-service.

Staff Expert/Witness: Shawn E. Lange, PE

RECOMMENDATION

Staff recommends the Commission grant Liberty a CCN for the replacement of Riverton 10 and 11, subject to conditions. Staff further recommends the Commission deny

⁷² Liberty EA-2023-0131 Application Paragraph 27.

Liberty's request for decisional prudence given the history discussed above. Finally, Staff recommends the Commission order the following conditions:

- (1) Liberty shall finalize necessary agreements with Kansas Department of Health and Environment to not only tune both replacement units on all available operational fuels at the expected temperature extremes but also be able to operationally test both replacement units on multiple fuel types as needed to maintain operational effectiveness. Liberty shall provide Staff annual reports until necessary agreements are in place.
- (2) Liberty shall provide Staff annual reports for a period of three years on the winterization actions that have been taken and the anticipated effects of those actions.
- (3) Liberty shall provide Staff annual reports for a period of three years on agreements/negotiations that occur with natural gas and fuel oil suppliers to ensure that the gas supply to the restoration unit is prioritized appropriately.
- (4) Liberty shall provide Staff a report within 18 months on its internal decision-making policies. Liberty shall consider implementing policies designed to eliminate the potential of future indecision on the repair/replacement of necessary restoration capacity in the future.
- (5) *** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] ***
- (6) Liberty shall file in this docket updated Restoration Plans within 60 days of the units' In-Service date.
- (7) Liberty shall file in this docket as-built construction drawings within 60 days of the units' In-Service date.
- (8) Liberty shall file its updated winter readiness plan within 60 days of the units' In-Service date.

- (9) Liberty shall amend its CCN application if the project and/or the transmission line extends to property that is currently not included in the Riverton Power Plant boundaries.
- (10) Liberty shall provide the Replacement Impact Study, Reliability Assessment Study and Interconnection Facilities Study when completed.

Attachments:

Highly Confidential Attachment SEL-1 - In-service Criteria

Schedule 1 - Staff Credentials

Case No. EA-2023-0131

ATTACHMENT SEL-1

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

SCHEDULE 1

STAFF CREDENTIALS AND CASE PARTICIPATION

**THE EMPIRE ELECTRIC COMPANY,
d/b/a Liberty**

CASE NO. EA-2023-0131

*Jefferson City, Missouri
March 8, 2024*

CREDENTIALS AND CASE PARTICIPATION OF
SHAWN E. LANGE, PE

PRESENT POSITION:

I am a Professional Engineer in the Engineering Analysis Department, Industry Analysis Division, of the Missouri Public Service Commission.

EDUCATIONAL BACKGROUND AND WORK EXPERIENCE:

In December 2002, I received a Bachelor of Science Degree in Mechanical Engineering from the University of Missouri, at Rolla now known as the Missouri University of Science and Technology. I joined the Commission Staff in January 2005. I am a registered Professional Engineer in the State of Missouri and my license number is 2018000230.

TESTIMONY FILED:

Case Number	Utility	Testimony	Issue
ER-2005-0436	Aquila Inc.	Direct	Weather Normalization
		Rebuttal	Weather Normalization
		Surrebuttal	Weather Normalization
ER-2006-0314	Kansas City Power & Light Company	Direct	Weather Normalization
		Rebuttal	Weather Normalization
ER-2006-0315	Empire District Electric Company	Direct	Weather Normalization
		Surrebuttal	Weather Normalization
ER-2007-0002	Union Electric Company d/b/a AmerenUE	Direct	Weather Normalization
ER-2007-0004	Aquila Inc.	Direct	Weather Normalization
ER-2007-0291	Kansas City Power & Light Company	Staff Report	Weather Normalization
		Rebuttal	Weather Normalization
ER-2008-0093	Empire District Electric Company	Staff Report	Weather Normalization
ER-2008-0318	Union Electric Company d/b/a AmerenUE	Staff Report	Weather Normalization

Case Number	Utility	Testimony	Issue
ER-2009-0089	Kansas City Power & Light Company	Staff Report	Net System Input
ER-2009-0090	KCP&L Greater Missouri Operations Company	Staff Report	Net System Input
ER-2010-0036	Union Electric Company d/b/a AmerenUE	Staff Report	Net System Input
ER-2010-0130	Empire District Electric Company	Staff Report	Variable Fuel Costs
		Surrebuttal	Variable Fuel Costs
ER-2010-0355	Kansas City Power & Light Company	Staff Report	Variable Fuel Costs
ER-2010-0356	KCP&L Greater Missouri Operations Company	Staff Report	Engineering Review-Sibley 3 SCR
ER-2011-0004	Empire District Electric Company	Staff Report	Variable Fuel Costs
ER-2011-0028	Union Electric Company d/b/a Ameren Missouri	Staff Report	Net System Input
ER-2012-0166	Union Electric Company d/b/a Ameren Missouri	Staff Report	Weather Normalization
		Surrebuttal	Weather Normalization Maryland Heights In-Service
ER-2012-0174	Kansas City Power & Light Company	Staff Report	Weather Normalization Net System Input Variable Fuel Costs
		Surrebuttal	Weather Normalization
ER-2012-0175	KCP&L Greater Missouri Operations Company	Staff Report	Weather Normalization Net System Input
		Surrebuttal	Weather Normalization
ER-2012-0345	Empire District Electric Company	Rebuttal	Interim Rates
		Staff Report	Weather Normalization
EC-2014-0223	Noranda Aluminum v. Ameren Missouri	Rebuttal	Weather Normalization
EA-2014-0207	Grain Belt Express CCN	Rebuttal	Certificates of Convenience/Feasibility Analysis
		Surrebuttal	

Case Number	Utility	Testimony	Issue
ER-2014-0258	Union Electric Company d/b/a Ameren Missouri	Staff Report	Net System Input Variable Fuel Costs
ER-2014-0351	Empire District Electric Company	Staff Report	Net System Input Variable Fuel Costs
ER-2014-0370	Kansas City Power & Light Company	Staff Report	Net System Input Variable Fuel Costs
		True-up Direct	Variable Fuel Costs La Cygne In-service
EA-2015-0146	ATXI CCN	Rebuttal	Certificates of Convenience/Feasibility Analysis
		Surrebuttal	
ER-2016-0023	Empire District Electric Company	Staff Report	Net System Input Variable Fuel Costs
		Surrebuttal	Variable Fuel Costs
ER-2016-0179	Union Electric Company d/b/a Ameren Missouri	Staff Report	Variable Fuel Costs
EA-2016-0385	Grain Belt Express CCN	Rebuttal	Certificates of Convenience/Feasibility Analysis
		Surrebuttal	
ER-2018-0145	Kansas City Power & Light Company	Staff Report	Variable Fuel Costs Market Prices
		Rebuttal	Variable Fuel Costs Market Prices
		True-up Direct	Variable Fuel Costs Market Prices
EA-2018-0327	ATXI CCN	Rebuttal	Certificates of Convenience/Feasibility Analysis
EA-2019-0021	Ameren CCN	Staff Report	Certificates of Convenience/Feasibility Analysis
EA-2019-0010	Empire District Electric Company CCN	Staff Report	Certificates of Convenience/Feasibility Analysis
EC-2020-0408	MLA v. Grain Belt Complaint	Staff Recommendation	Formal Complaint
EA-2021-0167	ATXI CCN	Staff Recommendation	Certificates of Convenience/Feasibility Analysis

Case Number	Utility	Testimony	Issue
EA-2021-0087	ATXI CCN	Staff Report	Certificates of Convenience/Feasibility Analysis
ER-2021-0240	Union Electric Company d/b/a Ameren Missouri	Staff Report	Variable Fuel Costs Atchison wind farm Construction Audit and in-service review
		Rebuttal	Atchison in-service and Variable Fuel Costs
		True-up Direct	Variable Fuel Costs
ER-2021-0312	Empire District Electric Company	Staff Report	Transmission and Distribution Investment
EA-2022-0043	Every Metro and Every West Hawthorn Solar CCN	Staff Report	Certificates of Convenience/Feasibility Analysis
EA-2022-0099	ATXI CCN	Staff Direct Testimony	Certificates of Convenience/Feasibility Analysis
EA-2022-0244	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificates of Convenience/Feasibility Analysis
EA-2022-0245	Union Electric Company d/b/a Ameren Missouri	Staff Rebuttal Testimony	Certificates of Convenience/Feasibility Analysis
ER-2022-0337	Union Electric Company d/b/a Ameren Missouri	Direct Testimony	Variable fuel Costs
		Rebuttal Testimony	Variable fuel Costs
		Surrebuttal/True-up Direct	Variable fuel Costs
		True-up Rebuttal	Variable fuel Costs
EA-2022-0328	Every West	Staff Rebuttal Testimony	Certificates of Convenience/Feasibility Analysis
EA-2023-0017	GrainBelt Express	Staff Rebuttal Testimony	Certificates of Convenience/Feasibility Analysis

Case Number	Utility	Testimony	Issue
EA-2023-0226	Ameren Missouri	Staff Memo	Certificates of Convenience/Feasibility Analysis
ET-2023-0249	Ameren Missouri	Staff Memo	Cogeneration and Net Metering rate
EA-2024-0286	Ameren Missouri	Rebuttal Testimony	Certificates of Convenience/Feasibility Analysis
EF-2024-0021	Ameren Missouri	Rebuttal	Financing Order Authorizing the Issue of Securitized Utility Tariff Bonds

CREDENTIALS AND CASE PARTICIPATION OF **BRODRICK NIEMEIER**

Present Position:

I am an Assistant Engineer in the Engineering Analysis Department, Industry Analysis Division, of the Missouri Public Service Commission.

Educational Background and Work Experience:

In December 2021, I received a Bachelor of Science Degree in Chemical Engineering from Missouri University of Science and Technology (UMR). I joined the Commission Staff in March 2022.

Testimony Filed:

Case Number	Utility	Testimony	Issue
GE-2018-0193	Summit Natural Gas of Missouri	Staff Report	Meter Inspections
EA-2022-0244	Ameren Missouri	Rebuttal	Qualifications and Report Requirements
EO-2022-0320	Evergy Missouri West	Staff Report	Change of Provider
WA-2022-0361	Missouri American Water Company	Staff Report	Depreciation
WA-2023-0026	Confluence Rivers	Staff Report	Depreciation
WA-2023-0071	Missouri American Water Company	Staff Report	Depreciation
EO-2023-0105	Evergy Missouri West	Staff Report	Change of Provider
GE-2023-0196	Liberty (Empire) Gas	Staff Report	Meter Inspections
GE-2023-0354	Spire Missouri	Staff Report	Meter Inspections
EO-2024-0035	Evergy Missouri West	Staff Report	Change of Provider
EO-2024-0142	Evergy Missouri West	Staff Report	Change of Provider
EO-2024-0161	Evergy Missouri West	Staff Report	Change of Provider

Credentials and Background of

Michael L Rush, PE

I am currently employed as a Critical Infrastructure Security Engineer at the Missouri Public Service Commission (MPSC). I previously held a professional engineering position in the Procurement Analysis Department of the MPSC.

I hold both a bachelor's degree in Mechanical Engineering and a master's degree in Computer Science from Arizona State University. I have been a practicing professional engineer since 1995 and have been in my present position since November 2016. I am responsible for working with Missouri utilities on both physical and cyber-security issues. I am also the critical infrastructure intelligence liaison to the Missouri Information Analysis Center (MIAC) as well as a lead responder for the energy sector emergency response function at the Missouri State Emergency Management Agency (SEMA).

Other professional experience includes employment as an Engineering Research Scientist at Lincoln University of Missouri in Jefferson City, a civilian Engineering Instructor at the Army Corps of Engineers' Prime Power School located within the Fort Leonard Wood Army training installation in Missouri, a Research Scientist at the Arizona State University Center for Cognitive Ubiquitous Computing (CUbiC) in Tempe Arizona, and a Sr. Project Engineer at the General Motors Corporation Desert Proving Ground located in Mesa Arizona.

CREDENTIALS AND CASE PARTICIPATION OF
JUSTIN TEVIE

Present Position:

I am an Economics Analyst in the Tariff/Rate Design Department, Industry Analysis Division, of the Missouri Public Service Commission.

Educational Background and Work Experience:

In 2013, I obtained a graduate degree in Economics from the University of New Mexico. In 2019, I joined the Missouri Department of Mental Health as a Research Analyst assisting with data analysis and federal reporting. Prior to that, I was a Forecast Analyst at Department of Social and Health Services in the State of Washington assisting with forensic caseload forecasting and reporting.

Testimony Filed:

Case No.	Company	Issue
ER-2022-0337	Ameren Missouri	Market prices
EO-2023-0136	Ameren Missouri	Savings shapes, program evaluation and EM & V

Credentials and Background of

Seoung Joun Won, PhD

I am currently employed as a Regulatory Compliance Manager in the Financial Analysis Department of the Financial and Business Analysis Division of the Missouri Public Service Commission. I have been employed at the Missouri Public Service Commission since May 2010.

I received my Bachelor of Arts, Master of Arts, and Doctor of Philosophy in Mathematics from Yonsei University and my Bachelor of Business Administration in Financial Accounting from Seoul Digital University in Seoul, South Korea, and earned my Doctor of Philosophy in Economics from the University of Missouri - Columbia. Also, I passed several certificate examinations for Finance Specialist in South Korea such as Accounting Management, Financial Risk Manager, Enterprise Resource Planning Accounting Consultant, Derivatives Investment Advisor, Securities Investment Advisor, and Financial Planner.

Prior to joining the Commission, I taught both undergraduate and graduate level mathematics at the Korean Air Force Academy and Yonsei University for 13 years. I served as the director of the Education and Technology Research Center in NeoEdu for 5 years. Before starting my current position at the Missouri Public Service Commission, I had served as a regulatory economist in Tariff/Rate Design Department.

My current duties at the Commission include financial analysis of rate of return and cost of equity, valuation analysis on merger and acquisition, due diligence review and supporting economic and statistical analysis.

List of Previous Testimony Filed

Seoung Joun Won, PhD

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
EF-2024-0192	Evergy Metro, Inc. d/b/a Evergy Missouri Metro	Financing Authority
WF-2024-0135	Liberty Utilities (Missouri Water) LLC d/b/a Liberty	Financing Authority
EF-2024-0099	Union Electric Co., d/b/a Ameren Missouri	Financing Authority
GA-2024-0100	Spire Missouri, Inc. d/b/a Spire	Financial Capability
EA-2023-0286	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
GA-2023-0441	Spire Missouri, Inc. d/b/a Spire	Financial Capability
EF-2023-0425	Evergy Metro Inc., d/b/a Evergy Missouri Metro	Financing Authority
SA-2023-0435	Missouri-American Water Company	Financial Capability
WA-2023-0434	Missouri-American Water Company	Financial Capability
GA-2023-0389	Spire Missouri, Inc. d/b/a Spire	Financial Capability
GA-2023-0374	Spire Missouri, Inc. d/b/a Spire	Financial Capability
GF-2023-0280	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty	Financing Authority
WA-2023-0345	Missouri-American Water Company	Financial Capability
EA-2023-0226	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
EA-2023-0017	Grain Belt Express LLC	Financial Capability
GA-2023-0038	Spire Missouri, Inc. d/b/a Spire	Financial Capability

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
EF-2022-0151	Union Electric Co., d/b/a Ameren Missouri	Financing Authority
EA-2022-0328	Evergy Missouri West, Inc. d/b/a Evergy Missouri West	Financial Capability
ER-2022-0337	Union Electric Co., d/b/a Ameren Missouri	Rate of Return, Capital Structure
EA-2022-0245	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
EA-2022-0244	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
EA-2022-0234	NextEra Energy Transmission Southwest, LLC	Financial Capability
GR-2022-0179	Spire Missouri, Inc., d/b/a Spire	Rate of Return, Capital Structure
GF-2022- 0169	Spire Missouri, Inc.	Financing Authority
EF-2022-0164	Union Electric Co., d/b/a Ameren Missouri	Financing Authority
WF-2022-0161	Missouri-American Water Company	Financing Authority
ER-2022-0130	Evergy Missouri West, Inc., d/b/a Evergy Missouri West	Rate of Return, Capital Structure
ER-2022-0129	Evergy Metro Inc., d/b/a Evergy Missouri Metro	Rate of Return, Capital Structure
EF-2022- 0103	Evergy Missouri West, Inc.	Financing Authority
WF-2022-0066	Missouri American Water Company	Financing Authority
WF-2021-0427	Raytown Water Company	Financing Authority
GR-2021-0320	Empire District Gas Company	Rate of Return, Capital Structure
ER-2021-0312	Empire District Electric Company	Rate of Return, Capital Structure

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
GR-2021-0241	Union Electric Co., d/b/a Ameren Missouri	Rate of Return, Capital Structure
ER-2021-0240	Union Electric Co., d/b/a Ameren Missouri	Rate of Return, Capital Structure
GR-2021-0108	Spire Missouri, Inc.	Rate of Return, Capital Structure
EA-2021-0087	Ameren Transmission Company of Illinois	Financial Capability
EA-2020-0371	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
SR-2020-0345	Missouri American Water Company	Rate of Return, Capital Structure
WR-2020-0344	Missouri American Water Company	Rate of Return, Capital Structure
EF-2020-0301	Evergy Missouri Metro	Financing Authority
WR-2020-0264	Raytown Water Company	Rate of Return, Capital Structure
WR-2020-0053	Confluence Rivers Utility Operating Company, Inc.	Rate of Return, Capital Structure
HM-2020-0039	Veolia Energy Kansas City, Inc. AIP Project Franklin Bidco	Merger and Acquisition
EO-2019-0133	KCP&L Greater Missouri Operations Company, Evergy Metro	Business Process Efficiency
EO-2019-0132	Kansas City Power & Light Company, Evergy Metro	Business Process Efficiency
GR-2019-0077	Union Electric Co., d/b/a Ameren Missouri	Weather & Normalization, Net System Input
GO-2019-0059	Spire West, Spire Missouri, Inc.	Weather Variables
GO-2019-0058	Spire East., Spire Missouri, Inc.	Weather Variables
ER-2018-0146	KCP&L Greater Missouri Operations Co.	Weather & Normalization, Net System Input
ER-2018-0145	Kansas City Power & Light Co.	Weather & Normalization, Net System Input
GR-2018-0013	Liberty Utilities (Midstates Natural Gas) Corp.	Weather Variables
GR-2017-0216	Missouri Gas Energy (Laclede), Spire Missouri, Inc.	Weather Variables
GR-2017-0215	Laclede Gas Co., Spire Missouri, Inc.	Weather Variables

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
ER-2016-0285	Kansas City Power & Light Co.	Weather & Normalization, Net System Input
ER-2016-0179	Union Electric Co., d/b/a Ameren Missouri	Weather & Normalization, Net System Input
ER-2016-0156	KCP&L Greater Missouri Operations Co.	Weather & Normalization, Net System Input
ER-2016-0023	Empire District Electric Company	Weather & Normalization, Net System Input
ER-2014-0370	Kansas City Power & Light Co	Weather & Normalization, Net System Input
ER-2014-0351	Empire District Electric Company	Weather & Normalization, Net System Input
ER-2014-0258	Union Electric Co., d/b/a Ameren Missouri	Weather & Normalization, Net System Input
EC-2014-0223	Noranda Aluminum, Inc., et al, Complaint v. Union Electric Co., d/b/a Ameren Missouri	Weather Variables
GR-2014-0152	Liberty Utilities (Midstates Natural Gas) Corp.	Weather Variables
GR-2014-0086	Summit Natural Gas of Missouri, Inc.	Weather Variables
HR-2014-0066	Veolia Energy Kansas City, Inc.	Weather Variables, Revenue
GR-2013-0171	Laclede Gas Co.	Weather Variables
ER-2012-0345	Empire District Electric Company	Weather Variables, Revenue
ER-2012-0175	KCP&L Greater Missouri Operations Co.	Weather Variables
ER-2012-0174	Kansas City Power & Light Co.	Weather Variables
ER-2012-0166	Union Electric Co., d/b/a Ameren Missouri	Weather Variables, Revenue
HR-2011-0241	Veolia Energy Kansas City, Inc.	Weather Variables
ER-2011-0028	Union Electric Co., d/b/a Ameren Missouri	Weather Variables, Revenue
ER-2011-0004	Empire District Electric Company	Weather Variables, Revenue
GR-2010-0363	Union Electric Co., d/b/a Ameren Missouri	Weather Variables
ER-2010-0356	KCP&L Greater Missouri Operations Co.	Weather Variables
ER-2010-0355	Kansas City Power & Light Co.	Weather Variables, Revenue

Work Related Publication

Won, Seoung Joun, X. Henry Wang, and Henry E. Warren. “Climate normals and weather normalization for utility regulation.” Energy Economics (2016).

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of)
The Empire District Electric Company) Case No. EA-2023-0131
d/b/a Liberty to Obtain a Certificate of)
Convenience and Necessity to Enhance)
System Resiliency)

AFFIDAVIT OF SHAWN E. LANGE, PE

STATE OF MISSOURI)
)) ss.
COUNTY OF COLE)

COMES NOW SHAWN E. LANGE, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report*; and that the same is true and correct according to his best knowledge and belief.

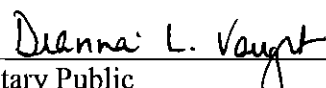
Further the Affiant sayeth not.



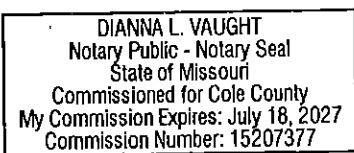
SHAWN E. LANGE, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 7th day of March 2024.



Notary Public



BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of)
The Empire District Electric Company) Case No. EA-2023-0131
d/b/a Liberty to Obtain a Certificate of)
Convenience and Necessity to Enhance)
System Resiliency)

AFFIDAVIT OF BRODRICK NIEMEIER

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

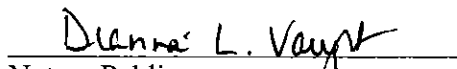
COMES NOW BRODRICK NIEMEIER and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report*; and that the same is true and correct according to his best knowledge and belief.

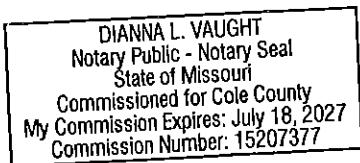
Further the Affiant sayeth not.


BRODRICK NIEMEIER

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 7th day of March 2024.


Notary Public



BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of)
The Empire District Electric Company) Case No. EA-2023-0131
d/b/a Liberty to Obtain a Certificate of)
Convenience and Necessity to Enhance)
System Resiliency)

MICHAEL L. RUSH, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW MICHAEL L. RUSH, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report*; and that the same is true and correct according to his best knowledge and belief.

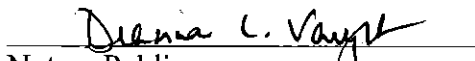
Further the Affiant sayeth not.


MICHAEL L. RUSH, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 7th day of March 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377


Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of)
The Empire District Electric Company) Case No. EA-2023-0131
d/b/a Liberty to Obtain a Certificate of)
Convenience and Necessity to Enhance)
System Resiliency)

AFFIDAVIT OF JUSTIN TEVIE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JUSTIN TEVIE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

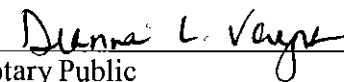


JUSTIN TEVIE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 7th day of March 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377



Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of)	
The Empire District Electric Company)	Case No. EA-2023-0131
d/b/a Liberty to Obtain a Certificate of)	
Convenience and Necessity to Enhance)	
System Resiliency)	

AFFIDAVIT OF SEOUNG JOUN WON, PhD

STATE OF MISSOURI)	
)	ss.
COUNTY OF COLE)	

COMES NOW SEOUNG JOUN WON, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report*; and that the same is true and correct according to his best knowledge and belief.

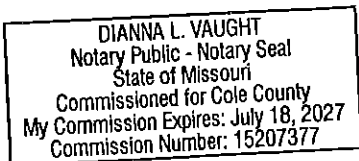
Further the Affiant sayeth not.

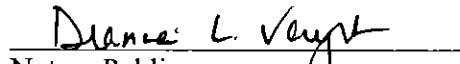


SEOUNG JOUN WON, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 7th day of March 2024.





Notary Public