Exhibit No.:
Issue(s): *High Prairie, Rush Island, and Energy Delivery Projects*
Witness: *Claire M. Eubanks, P.E.*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
Case No.: *ER-2024-0319*
Date Testimony Prepared: *December 3, 2024*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

DIRECT TESTIMONY

OF

CLAIRE M. EUBANKS, P.E.

UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri

CASE NO. ER-2024-0319

Jefferson City, Missouri
December 2024

** Denotes Confidential Information **

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DIRECT TESTIMONY

OF

CLAIRE M. EUBANKS, P.E.

UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri

CASE NO. ER-2024-0319

Q. Please state your name and business address.

A. My name is Claire M. Eubanks and my business address is Missouri Public Service Commission, P.O. Box 360, Jefferson City, Missouri, 65102.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission ("Commission") as the Manager of the Engineering Analysis Department of the Industry Analysis Division.

Q. Please describe your educational background and work experience.

A. I received my Bachelor of Science degree in Environmental Engineering from the University of Missouri – Rolla, now referred to as Missouri University of Science and Technology, in May 2006. I am a licensed professional engineer in the states of Missouri and Arkansas. I began my career as a Project Engineer with Aquaterra Environmental Solutions, Inc., now SCS Aquaterra, an engineering consulting firm with locations across the Midwest. As a Project Engineer, I worked on a variety of engineering and environmental projects including landfill design, environmental sampling, construction oversight, and construction quality assurance. Over the course of my six years with Aquaterra I was promoted several times, eventually to Project Manager. As a Project Manager, I managed a variety of engineering projects primarily related to the design and environmental compliance of solid waste landfills,

including performing as the Certifying Engineer for projects related to landfill design, construction plans and specifications, and construction quality assurance.

In November 2012, I began my employment with the Commission as a Utility Regulatory Engineer I. My primary job duties were primarily related to the Renewable Energy Standard, reviewing applications for Certificates of Convenience and Necessity, construction audits, and the development and evaluation of in-service criteria. In January 2017, I was promoted to Utility Regulatory Engineer II and in April of 2020, I was promoted to my current position.

Q. Have you previously filed testimony before the Commission?

A. Yes, numerous times. Please refer to Schedule CME-d1, attached to this Direct Testimony, for a list of cases in which I have filed testimony or recommendations.

Q. What knowledge, skills, experience, training, and education do you have in the areas of which you are testifying as an expert witness?

A. In addition to that discussed above, I have received continuous training at in-house and outside seminars on technical matters since I began my employment at the Commission. I have been employed by this Commission as an Engineer for over 10 years, and have submitted testimony numerous times before the Commission. I have also been responsible for the supervision of other Commission employees in rate cases and other regulatory proceedings.

EXECUTIVE SUMMARY

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to present Staff's recommendation regarding the ongoing bat mitigation issues and recent turbine collapses at the High Prairie

Renewable Energy Facility ("High Prairie"), a 400 Megawatts (MW) wind farm located in Schuyler and Adair Counties, Missouri. I provide an update regarding Staff's concerns with the retirement of Rush Island Energy Center ("Rush Island"), a coal-fired generation station near Festus, Missouri. Finally, I discuss Staff's ongoing review of Ameren Missouri's Smart Energy Plan energy delivery projects.

HIGH PRAIRIE WIND FARM

Bat Mitigation

Q. Please explain the ongoing bat mitigation issue with the High Prairie wind farm.

A. From October 2, 2020, through June 21, 2021, nine (9) Indiana bat fatalities were discovered at the High Prairie wind farm.[1] The majority of bat fatalities occurred after Ameren Missouri closed on the facility in December 2020. On May 14, 2021, the United States Fish and Wildlife Service ("USFWS") issued an Incidental Take Permit ("ITP") for High Prairie. An ITP is a permit issued to private entities undertaking projects that might result in the take of an endangered species. The ITP for High Prairie authorizes "the take of up to 72 Indiana bats, 18 northern long-eared bats, and 96 little brown bats over a non-renewable 6 year ITP."[2] As required by the ITP, Ameren Missouri made operational changes based on the number of bat fatalities. Eventually, to avoid the taking of additional bats, Ameren Missouri voluntarily ceased all nighttime operations on June 21, 2021. Nighttime means 45 minutes before sunset until 45 minutes after sunrise.

Q. Has Ameren Missouri operated any turbines at High Prairie at night since the facility was placed in-service?

[1] Ameren Missouri response to Staff Data Request 0742 in ER-2021-0240.
[2] Permit Number: ESPER0011567 provided in Response to OPC Data Request 2004 in ER-2021-0240.

A. Yes, however, nighttime operations have been limited. From April 1, 2022, through October 31, 2022, up to ten turbines operated on select nights.[3] From April 1, 2023, through September 26, 2023, up to 50 turbines operated under limited operations at night.[4] From September 26, 2023, through October 31, 2023, Ameren Missouri voluntarily ceased all operations at night.[5]

The table[6] below details the turbine operations for the most recent spring and summer monitoring seasons (April 1 – August 15, 2024):

Season	Date Range	Number of Turbines Operating at Night	Number of Turbines Not Operating at Night
Spring	April 1 – April 27	50	125
	April 28 – May 14	0	174
Summer	May 15	0	174
	May 16 – May 28	50	124
	May 29 – June 2	75	99
	June 3 – June 9	78[1]	96
	June 10	0	174
	June 11 – August 15	48	126

1. Three turbines (E-10, E-11, H-07) were operating at night but were not searched due to unanticipated access constraints. These turbines operated from May 29-June 9 only since access constraints are still ongoing.

Q. What is the impact to customers of ceasing operations at High Prairie over night?

A. Ameren Missouri has lost revenue, Production Tax Credits ("PTCs"), and Renewable Energy Credits ("RECs"). The loss of revenue and PTCs means fewer benefits are flowing to customers through the Fuel Adjustment Clause ("FAC") and Renewable Energy Standard Rate Adjustment Mechanism ("RESRAM") than otherwise would occur. The loss of RECs has increased the cost of compliance with the Renewable Energy Standard in that Ameren Missouri has had to purchase RECs to comply.

[3] 2022 Annual Post-Construction Bat Mortality Monitoring Report, Stantec, December 15, 2022.
[4] Limited operations means a cut-in speed of 8 meters/second and the use of EchoSense smart curtailment technology.
[5] 2023 Annual Post-Construction Bat Mortality Monitoring Report. Stantec, December 14, 2023.
[6] High Prairie Renewable Energy Center Summer Season Post-Construction Monitoring Report. WEST, Inc., September 13, 2024.

Q. Did Staff quantify the lost revenue, PTCs, and RECs stemming from the lack of nighttime operations?

A. Yes. Staff quantified the lost off-system sales revenue, PTCs, and RECs over 12-months ending June 30, 2024. These adjustments were provided to Auditing for inclusion in Staff's accounting schedules.

The table below presents Staff's quantification of the lost off-system sales revenue, PTCs, and RECs for the test year as updated, the 12-month period ending June 30, 2024, due to Ameren Missouri's voluntary curtailment at High Prairie:

Lost Off-system sales Revenue	$ 12,042,709
Lost PTCs	$ 14,218,544
Value of lost RECs	$ 1,313,508

Q. How did Staff quantify the lost off-system sales revenue?

A. First, Staff estimated the amount of generation that did not occur overnight over a 12-month period ending June 30, 2024. Staff compared two output profiles for High Prairie, one profile reflects no generation overnight from April - October. The other profile reflects High Prairie's original operating profile.[7] To calculate the lost generation, Staff netted the generation from these two profiles in every hour, resulting in ** [redacted] ** not produced. Staff then multiplied each MWh to the corresponding normalized day-ahead market price as provided by Staff witness Justin Tevie.

[7] Direct Testimony of Andrew M. Meyer, ER-2022-0337, page 41, lines 7 – 12.

Q. If Ameren Missouri has begun operating turbines during nighttime hours, why did Staff choose a generation shape that includes no overnight hours?

A. Staff compared the historical generation data by month and year. Although Ameren Missouri may have operated some turbines overnight during the test-year, monthly and annual generation has not consistently improved. Overall, Staff found the shape it used in the most recent rate case, a shape representing a 5 m/s cut-in speed[8] with no overnight generation during the bat season of April through October, to be most reflective of the 8,760-hour shapes available to Staff.

Q. How did Staff quantify the lost PTCs?

A. Staff utilized the process above to calculate the lost generation and then calculated the lost PTCs in the same manner Ameren Missouri calculates the PTCs for the RESRAM (i.e., multiplying the generation by the PTC rate and effective tax rate).

Q. How did Staff quantify the lost RECs?

A. RECs represent that 1 MWh of generation was produced by a renewable energy resource. High Prairie is located in Missouri and therefore receives an additional adder (i.e., 1.25 REC per MWh). High Prairie's lost generation would have contributed ** [redacted] ** RECs (assuming the 1.25 adder for its Missouri location). Staff utilized an average cost of ** [redacted] ** to calculate the additional RES compliance cost associated with the lost High Prairie generation. The REC price reflects the average price of ** [redacted] **.[9]

[8] Cut-in speed represents the wind speed at which turbine blades begin to rotate and produce electricity.
[9] Response to Staff Data Request 0507 in ER-2024-0319.

Q. Has Ameren Missouri requested to modify its incidental take permit for High Prairie?

A. Yes. Ameren Missouri requested to increase the overall take threshold for Indiana bats from 72 to 102 for the remaining years of the six-year ITP. According to the Fish and Wildlife Service, this would allow Ameren to find 6-12 more Indiana bats in the remaining permit term (email dated July 11, 2024, USFWS response to Ameren's HP request).[10]

Q. Does Ameren Missouri intend to apply for a life of the project permit from USFWS?

A. It is Staff's understanding that Ameren Missouri is working toward a life of the project permit application. However, the permitting timeline is approximately 20-32 months.[11]

Q. Has Ameren Missouri made progress in implementing its bat mitigation measures?

A. Yes. Ameren Missouri implemented several projects related to bat mitigation measures:

- EchoSense (previously referred to as Detection and Active Response Curtailment ("DARC"));
- A Bat Deterrent System; and
- A Modeled Curtailment Study.

Q. What is the EchoSense system and is it in use?

A. The EchoSense system is a series of microphones that interfaces with the control system for the wind turbines. If bat calls are detected, the control system will signal the turbines to curtail for 10 minutes. Ameren Missouri began phasing in the operation of the EchoSense

[10] Response to Staff Data Request 0390 in ER-2024-0319. July 11, 2024 email from Kathryn Bulliner, USFWS.
[11] Response to Staff Data Request 0390 in ER-2024-0319. July 11, 2024 email from Kathryn Bulliner, USFWS.

system during the last rate case. At that time Ameren Missouri had planned on expanding its use to 90 turbines by mid-April 2023,[12] but as shown in the table on page 4 of this testimony, Ameren Missouri had only expanded its use to 78 turbines at night and that occurred for only seven days.

Q. What is the Bat Deterrent System and is it in use?

A. The Bat Deterrent System creates ultrasonic noise to deter bats from entering the area around the wind turbines. Equipment is installed on 15 turbines. However, Ameren Missouri indicated that it does not intend to expand the use of the deterrent system.[13]

Q. What is the Modeled Curtailment Study and its status?

A. Ameren Missouri had contracted with Western EcoSystems Technology ("WEST") to study when bats are active near operational wind turbines at High Prairie. In the last rate case it was anticipated that WEST would recommend curtailment criteria designed to reduce bat fatalities while also increasing wind turbine available operational time. Ameren Missouri represents that it is presently being used to help inform conservative operations but is not being used to control turbine operations.[14]

Q. Is Staff including the plant associated with EchoSense and Bat Deterrent systems in its direct case?

A. Yes. Staff included the plant associated with this equipment in the previous rate case. While Ameren Missouri does not plan to expand the use of the bat deterrent system, it provides data which may help Ameren Missouri obtain a long-term permit for the site. In the

[12] ER-2022-0337, Direct Testimony of Andrew M. Meyer, page 38, line 5.
[13] Response to Staff Data Request No. 0390 in ER-2024-0319.
[14] Response to Staff Data Request No. 0390 in ER-2024-0319.

event the bat mitigation systems are found to be ineffective, Staff will reevaluate the inclusion of the equipment in plant.

Q. What is Staff's recommendation regarding the bat curtailment at High Prairie?

A. Staff recommends the Commission order adjustments, as shown in Staff's accounting schedules, related to lost production at High Prairie related to lost off-system sales revenue, lost PTCs, and the value of lost RECs.

Turbine Collapses

Q. Please explain the turbine collapses at High Prairie Renewable Energy Center.

A. On April 27, 2024, turbine G-08 collapsed. As required by 20 CSR 4240-3.190(3)(A), Ameren Missouri reported the incident in EFIS, ** [redacted] **. On August 25, 2024, turbine B-11 collapsed ** [redacted] **. On October 31, 2024, turbine C-12 collapsed ** [redacted] **. These incidents require a detailed investigative report be provided; ** [redacted] **.[15]

Q. Did Staff propose an adjustment in this case to remove the plant associated with these turbines?

A. Yes. Turbines B-11, G-08 and C-12 are not operational or used for service. The three new replacement turbines are not expected to be constructed prior to the true-up cutoff date (December 31, 2024). ** [redacted]

[15] Ameren Missouri ** [redacted] ** .

[redacted][16] [redacted]

[redacted] **.

Q. How did Staff estimate the proposed adjustment for the B-11, G-08, and C-12 turbine collapses?

A. Staff utilized Ameren Missouri's continuing property record for High Prairie. The vast majority of the continuing property record for High Prairie includes non-unitized plant information. In other words, Ameren Missouri has included the plant cost but not associated it with individual retirement units of property ("RUC"). However, there were a few turbines that were in-service and unitized such that Staff could provide a reasonable estimate for the cost of a single turbine. Staff also included a corresponding reserve adjustment. The result of Staff's adjustment is a removal of approximately $7.05 million in plant and $1.07 million in reserve.

Q. Please summarize Staff's recommendation on this issue.

A. Staff recommends the Commission order adjustments, as shown in Staff's accounting schedules, to reflect that the three collapsed turbines are not operational and thus not serving customers. Staff further recommends that the Commission order Ameren Missouri to update its policies to more timely unitize its continuing property records.

RUSH ISLAND ENERGY CENTER

Q. Please briefly describe the issue regarding the Rush Island Energy Center.

A. In January 2017, a U.S. District Court judge ruled that Ameren Missouri violated the Clean Air Act when it made upgrades to its Rush Island Power Plant. In 2019, the

[16] Ameren Missouri response to Staff Data Request 0548 in ER-2024-0319.

U.S. District Court for the Eastern District of Missouri ordered Ameren Missouri to obtain applicable permits, install wet flue-gas desulfurization units (i.e., scrubbers) and meet standards for sulfur dioxide emissions. Ameren Missouri ultimately made the decision to retire Rush Island.

In EF-2024-0021, Staff recommended that the Commission find that Ameren Missouri's decision to comply with the District Court's modified Remedy Order to retire the Rush Island plant no later than October 15, 2024, is reasonable and prudent. However, Staff recommended the Commission acknowledge Ameren Missouri's failure to plan for the outcome of the litigation and consider future disallowances related to the Rush Island Reliability projects, potential future remedies, and potential capacity shortfalls in a future rate proceeding.

Q. Has the District Court ordered additional remedies related to Rush Island?

A. No. However, the U.S. Department of Justice, Sierra Club, and Ameren Missouri agreed to a settlement to spend $25 million on vouchers for HEPA filters and $36 million to assist St. Louis-area school districts switch to electric buses.[17] The proposed settlement was published in the Federal Register and the comment period closes on December 13, 2024.[18] Staff witness Keith Majors presents Staff's recommendations regarding Rush Island litigation and the pending remedy of $61 million.

Q. Please provide a description of the Rush Island Reliability Project.

A. There are four transmission projects Ameren Missouri expects to complete by the true-up cutoff date of this case related to the retirement of Rush Island:

[17] Ameren Missouri reaches agreement with federal prosecutors to offset clean air violations - St. Louis Business Journal
[18] Ameren Missouri Monthly Report, November 15, 2024. EO-2022-0215.

- Wildwood transformer replacement,
- Installation of a capacitor bank at Ameren Missouri's Overton Substation,
- Upgrade of the substation bus at Rush Island's switchyard, and
- Installation of four Static Compensators ("STATCOMs") in the St. Louis region.

Q. What is the status and anticipated cost of these projects?

A. Ameren Missouri reports that the Wildwood transformer replacement, the Overton substation capacitor bank, and upgrade of the substation bus at Rush Island's switchyard are complete. The remaining project, installation of the four STATCOMs, is expected to be completed in December 2024. Ameren Missouri estimates that the total Rush Island Reliability Project cost will be approximately ** [redacted] **.

Q. Does Staff have concerns with these projects?

A. Yes. As discussed in the Rush Island Securitization case, Ameren Missouri understood that transmission investment would need to be made upon the retirement of Rush Island. Ameren Missouri's 2020 IRP Workpapers indicate that Ameren Missouri assumed transmission upgrades between ** [redacted] **.[19] Ameren Missouri made the decision to retire Rush Island on a break-even analysis around ** [redacted] ** for the transmission upgrades. The estimate upon approval of these projects was ** [redacted] **.[20]

Ameren Missouri received the court ruling in January of 2017, but ** [redacted]

[19] Response to Staff Data Request No. 0009 in EO-2022-0215.
[20] Response to Staff Data Request No. 0017 in EF-2024-0021.

[redacted] **.[21]

Ameren Missouri received its Notice of Violations in 2010 and 2011, therefore, it seems reasonable, or appropriate, that Ameren Missouri would have been planning for such a court ruling as far back as its 2011 Triennial Compliance Filing. In fact, Ameren Missouri itself considered evaluating New Source Review ("NSR") litigation scenarios even before the 2010 outage occurred. Ameren Missouri then received the negative court ruling on January 23, 2017, approximately seven months before it filed its 2017 Resource Plan on August 1, 2017. Ameren Missouri chose to appeal that decision and chose not to evaluate a comparison of the retirement of Rush Island to retrofitting Rush Island until the 2020 IRP. In response to Sierra Club, Ameren Missouri asserted: ** [redacted] **.[22, 23] Given Ameren Missouri had already received a negative outcome from the Court, it would have been reasonable and prudent for Ameren to consider the possibility that an Appeals Court would uphold that decision.

Q. Does Staff have any other concerns with the Rush Island reliability Project?

A. Yes. On October 18, 2024, Ameren Missouri filed a Certificate of Convenience and Necessity for the Cooper Substation in EA-2025-0088. Ameren Missouri's CCN request

[21] Response to Staff Data Request No. 0001 in EO-2022-0215. Confidential Schedule CME-d2.
[22] Response to Sierra Club 2-SC 002.8 in ER-2022-0337 attached as Confidential Schedule CME-d3.
[23] The Commission ordered, on December 3, 2019, a special contemporary resource planning issue in EO-2020-0047: "Ameren Missouri to model scenarios related to environmental upgrades to the Rush Island and Labadie coal-fired plants as mandated by the federal courts."

is to build the Cooper substation near the existing Overton 161 kV / 69 kV Substation.[24] Ameren Missouri represents the planned Cooper Substation will accommodate a new capacitor bank that is needed for system reinforcement upon the retirement of Rush Island. As explained above, Ameren Missouri has already installed a new capacitor bank at the Overton substation. This portion of the Rush Island Reliability project is ** [redacted] **. Staff has requested additional information regarding this portion of the Rush Island Reliability project.

Q. Is there a reason Staff is concerned with potential duplication?

A. Yes. ** [redacted] ** .[25]

Q. Are there other projects Ameren Missouri identified as being related to the retirement of Rush Island?

A. Yes. Ameren Missouri reports the following projects in its monthly reports in Case No. EO-2022-0215 as being needed to meet Ameren Missouri's local transmission planning criteria:

- Reconductoring 345 kV Coffeen to Roxford transmission line (** [redacted] **).[26]

[24] EA-2025-0088 Application, paragraph 13.
[25] Response to Staff Data Request 0566. ** [redacted] **
[26] Response to Staff Data Request 0571.

- Install new shunts on the 138kV Neoga-Effingham Northwest transmission line (** [redacted] **).
- New 138kV transmission line from Beehive to Dupo Ferry and associated projects (** [redacted] **).
- Maintenance project at the 138kV Hannibal West substation.

Q. Does Staff expect Missouri ratepayers to share in the cost of the projects related to local transmission planning criteria?

A. No, with the exception of the Hannibal West substation maintenance project, these projects were submitted to MISO by Ameren Illinois for consideration in the 2023 MISO Transmission Expansion Plan process and are identified by MISO as not cost shared. Staff requested additional information regarding recent changes to Ameren Missouri's local transmission planning criteria.

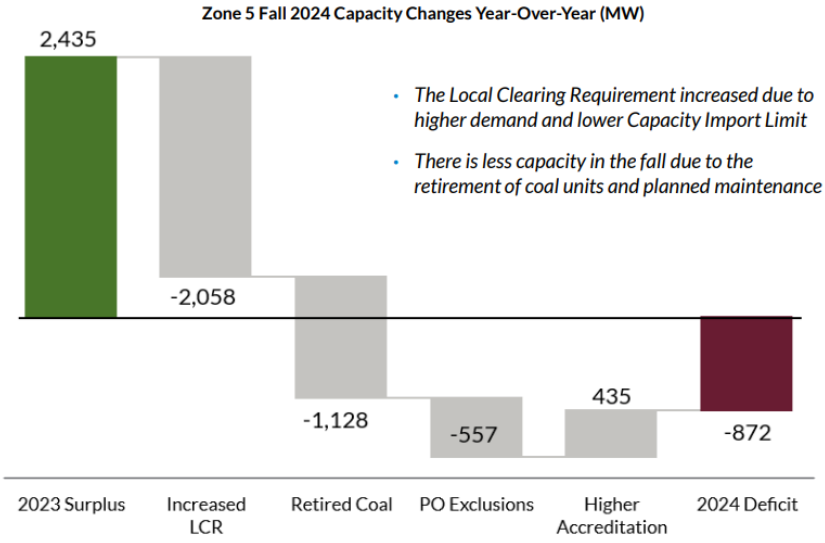
Q. What is Staff's concern with potential capacity shortfalls related to the retirement of Rush Island?

A. Ameren Missouri understood that its resource adequacy capacity position after the retirement of Rush Island would be tight in the coming years.[27] Staff specifically asked in the Rush Island investigation case, File No. EO-2022-0215, about how Ameren Missouri planned to meet MISO reserve margins. Ameren Missouri responded, referring back to a data request that explained its preferred plan analysis was underway, as well as stating, "Also note that to the extent Ameren Missouri would expect to fall short of its resource adequacy requirement in MISO in a given year, it may rely on market purchases of capacity."[28]

[27] EO-2022-0215, On the Record, page 8, lines 17-21. Page 12, lines 13-14. Page 27, lines 18-25.
[28] Response to Staff Data Request No. 0014 in EO-2022-0215. Confidential Schedule CME-d4.

As the Commission is well aware, MISO's capacity auction for Spring and Fall 2024-2025 resulted in a deficit of capacity in Zone 5 in the fall and spring. If the auction does not have enough installed capacity, the auction uses a price for the Cost of New Entry ("CONE").[29] The CONE for 2024-2025 capacity auction was priced at $719.81/MW-Day.

As shown below,[30] there are multiple items that played a role in why Zone 5 is short for fall 2024. The retirement of coal in the chart below reflects the retirement of Rush Island. There are accreditation changes for some facilities in the Ameren Missouri fleet and planned outages. Finally, there is an expected higher demand for electricity as well as limitation on the power coming into Zone 5.



Q. Is Staff proposing an adjustment related to the above discussion of Rush Island issues?

[29] Cost of New Entry is an industry-wide term, used to indicate the current, annualized, capital cost of constructing a power plant. https://cdn.misoenergy.org/20221012%20RASC%20Item%2004c%20CONE%20Update626542.pdf slide 4.
[30] https://cdn.misoenergy.org/2024%20PRA%20Results%20Posting%20240425632665.pdf. MISO Planning Resource Auction Results for Planning Year 2024-25 Dated April 25, 2024 Slide 5.

A. Yes. Staff witness Keith Majors discusses NSR legal expense, pending remedies, and accounting issues related to the remedies. Regarding the stipulated remedies (i.e., HEPA filters and electric busses) to the extent Ameren Missouri seeks recovery in this case, Staff will propose an adjustment.

Staff intends to review the final costs associated with the Rush Island Reliability Project in true-up. Ameren Missouri expects three STATCOMs to be in-service during the true-up portion of this case. The final STATCOM is expected to be in-service by June 2025. At this time, ** [redacted] **. [31] However, as discussed earlier, Staff is concerned with the potential for duplication of equipment and is issuing discovery in this case and the Cooper substation CCN case.

Finally, regarding Staff's concerns with Ameren Missouri's capacity position, Staff considered the impact of Rush Island in its recommendation regarding annualized capacity expense and capacity revenues. Staff witness Lisa M. Ferguson provides Staff's recommendation on annualized capacity expense and capacity revenues in her direct testimony.

SMART ENERGY PLAN – ENERGY DELIVERY PROJECTS

Q. What is the Smart Energy Plan?

A. Ameren Missouri's Smart Energy Plan stems from Senate Bill 564, enacted in 2019. This legislation allows Ameren Missouri to use Plant-in-Service Accounting. The Smart

[31] ** [redacted] **

Energy Plan touches on the entirety of Ameren Missouri's operations. Ameren Missouri files its five-year capital budget with the Commission each February in EO-2019-0044.

Ameren Missouri's five-year Capital Investment Plan includes approximately $1.7 billion of capital investment in 2023 across all categories as shown in the table below:

$ - Thousands

Category 1	2023 Actual
Smart, Reliable Grid Operations	795,164
Smart Meter Program	65,715
Non-Nuclear Generation & Environmental	97,214
Nuclear Generation	104,992
Hydro Generation	31,692
Renewable & Gas Turbine Generation*	63,621
New Renewable Generation	*30,010*
New Dispatchable Generation	*2,522*
Secure & Reliable Transmission	308,406
Cyber & Technology Upgrades	176,555
Operational & Customer Support Facilities	64,518
Innovative Opportunities	7,377
Grand Total - Capital	**1,715,254**

Grid Modernization Total	852,748
Ongoing Operations Total	862,506
Grid Modernization Total Percent	49.7%
Smart Meter Program Total (Excluding TOU)	65,275
Smart Meter Program Total Percent	3.8%
Renewable Asset Acquisitions	905
Grand Total, Including Renewable Asset Acquisitions	**1,716,159**

*Renewable & Gas Turbine Generation is inclusive of New Renewable Generation & New Dispatchable Generation

Q. Please describe Staff's review of the Smart Energy Plan projects in this case.

A. Staff's Engineering Analysis Department reviewed a selection of Ameren Missouri's Smart Energy Plan projects related to energy delivery projects in the Smart, Reliable Grid Operations category with consideration of the following: whether the projects are needed for safe and reliable service, whether the projects provide reliability improvements, and whether there were significant variances in costs from an individual project's budget and its actual cost.

Engineering Analysis is reviewing the documentation provided by Ameren Missouri pursuant to the stipulation and agreement in ER-2021-0240 (filed quarterly in EO-2019-0044).

For this case, Engineering Analysis Staff selected project from the 2023 quarterly filings and the first quarter of 2024. Staff reviewed 58 projects totaling ** [redacted] **. Staff intends to review additional projects through December 31, 2024, in true-up direct testimony.

Q. What documentation did Ameren Missouri provide?

A. Ameren Missouri provides Staff project specific documentation for individual projects quarterly. This included the following items as applicable:

a. Purchase orders;
b. Change orders;
c. Final project cost summaries;
d. Project Notifications/Project Charters;
e. Oversight Committee review materials; and
f. In-service dates.

Q. Did Staff discover any evidence of imprudence?

A. Not at this time. As with any construction project, Engineering Analysis found variances in an individual project's budget and its actual cost. For example, a project may see an increase in actual cost due to unforeseen field conditions. Engineering Analysis is reviewing the individual project documentation and is continuing to follow-up with Ameren Missouri regarding specific questions through the true-up phase of this case.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service	)))	Case No. ER-2024-0319

AFFIDAVIT OF CLAIRE M. EUBANKS, PE

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW CLAIRE M. EUBANKS, PE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Direct Testimony of Claire M. Eubanks, PE*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Claire M Eubanks

CLAIRE M. EUBANKS, 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 25th day of November 2024.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

D Suzie Mankin

Notary Public

CLAIRE M. EUBANKS, PE

PRESENT POSITION:

I am the Manager of the Engineering Analysis Department, Industry Analysis Division of the Missouri Public Service Commission.

EDUCATIONAL BACKGROUND AND WORK EXPERIENCE:

I received my Bachelor of Science degree in Environmental Engineering from the University of Missouri – Rolla, now Missouri University of Science and Technology, in May 2006. I am a licensed professional engineer in the states of Missouri and Arkansas. Immediately after graduating from UMR, I began my career with Aquaterra Environmental Solutions, Inc., now SCS Aquaterra, an engineering consulting firm based in Overland Park, Kansas. During my time with Aquaterra, I worked on various engineering projects related to the design, construction oversight, and environmental compliance of solid waste landfills. I began my employment with the Commission in November 2012 and was promoted to my current position in April 2020.

Currently, I am the co-chair of the NARUC Staff subcommittee on Electric Reliability & Resilience.

CASE HISTORY:

Case Number	Utility	Type	Issue
EA-2012-0281	Ameren	Rebuttal	Certificate of Convenience and Necessity
EC-2013-0379 EC-2013-0380	KCP&L KCP&L GMO	Rebuttal	RES Compliance
EO-2013-0458	Empire	Memorandum	RES Compliance Plan & Report
EO-2013-0462	Ameren	Memorandum	RES Compliance Report
EO-2013-0503	Ameren	Memorandum	RES Compliance Plan
EO-2013-0504	KCPL	Memorandum	RES Compliance Plan & Report
EO-2013-0505	GMO	Memorandum	RES Compliance Plan & Report
ET-2014-0059	KCP&L GMO	Rebuttal	RES Retail Rate Impact
ET-2014-0071	KCP&L	Rebuttal	RES Retail Rate Impact
ET-2014-0085	Ameren	Rebuttal	RES Retail Rate Impact
ER-2014-0258	Ameren	Cost of Service Report, Surrebuttal	RES, In-Service

Case Number	Utility	Type	Issue
EO-2014-0151	KCP&L GMO	Memorandum	RESRAM
EO-2014-0357	Electric	Memorandum	Solar Rebates Payments
EO-2014-0287	KCPL	Memorandum	RES Compliance Plan
EO-2014-0288	GMO	Memorandum	RES Compliance Plan
EO-2014-0289	KCPL	Memorandum	RES Compliance Report
EO-2014-0290	GMO	Memorandum	RES Compliance Plan
ER-2014-0370	KCP&L	Cost of Service Report	RES
EX-2014-0352	N/A	Live Comments	RES rulemaking
EC-2015-0155	GMO	Memorandum	Solar Rebate Complaint
EO-2015-0260	Empire	Memorandum	RES Compliance Plan & Report
EO-2015-0263	KCPL	Memorandum	RES Compliance Report
EO-2015-0264	GMO	Memorandum	RES Compliance Report
EO-2015-0265	KCPL	Memorandum	RES Compliance Plan
EO-2015-0266	GMO	Memorandum	RES Compliance Plan
EO-2015-0267	Ameren	Memorandum	RES Compliance Plan & Report
EO-2015-0252	GMO	Staff Report	Integrated Resource Plan – Renewable Energy Standard
EO-2015-0254	KCPL	Staff Report	Integrated Resource Plan – Renewable Energy Standard
EA-2015-0256	KCP&L GMO	Live Testimony	Greenwood Solar CCN
EO-2015-0279	Empire	Memorandum	RES Compliance Plan & Report
ET-2016-0185	KCP&L	Memorandum	Solar Rebate Tariff Suspension
EO-2016-0280	KCPL	Memorandum	RES Compliance Report
EO-2016-0281	GMO	Memorandum	RES Compliance Report
EO-2016-0282	KCPL	Memorandum	RES Compliance Plan
EO-2016-0283	GMO	Memorandum	RES Compliance Plan
EO-2016-0284	Ameren	Memorandum	RES Compliance Plan & Report
ER-2016-0023	Empire	Report	RES
ER-2016-0156	KCP&L GMO	Rebuttal	RESRAM Prudence Review

Case Number	Utility	Type	Issue
EA-2016-0208	Ameren	Rebuttal	Certificate of Convenience and Necessity
ER-2016-0285	KCPL	Cost of Service Report	In-Service, Greenwood Solar
ER-2016-0179	Ameren	Rebuttal	In-Service, Labadie Landfill
EW-2017-0245	Electric	Report	Working Case on Emerging Issues in Utility Regulation
EO-2017-0268	Ameren	Memorandum	RES Compliance Plan & Report
EO-2017-0269	KCPL	Memorandum	RES Compliance Report
EO-2017-0271	KCPL	Memorandum	RES Compliance Plan
GR-2017-0215 & GR-2017-0216	Spire	Rebuttal & Surrebuttal	CHP for Critical Infrastructure
GR-2018-0013	Liberty Utilities (Midstates Natural Gas)	Rebuttal	CHP Outreach Initiative for Critical Infrastructure Resiliency
EO-2018-0287	Ameren	Memorandum	RES Compliance Plan & Report
EO-2018-0288	KCPL	Memorandum	RES Compliance Report
EO-2018-0290	KCPL	Memorandum	RES Compliance Plan
EA-2016-0207	Ameren	Memorandum	Certificate of Convenience and Necessity
ER-2018-0146	GMO	Cost of Service Report	RESRAM Prudence Review
ER-2018-0145 ER-2018-0146	KCPL GMO	Class Cost of Service Report, Rebuttal	Solar Subscription Pilot Rider, Standby Service Rider
EA-2018-0202	Ameren	Staff Report	Certificate of Convenience and Necessity
EE-2019-0076	Ameren	Memorandum	Variance Request – Reliability Reporting
EA-2019-0021	Ameren	Staff Report	Certificate of Convenience and Necessity
EA-2019-0010	Empire	Staff Report	Certificate of Convenience and Necessity
EX-2019-0050	N/A	Live Comments	Renewable Energy Standard

Case Number	Utility	Type	Issue
EO-2019-0315	KCPL	Memorandum in Response to Commission Questions	Renewable Energy Standard
EO-2019-0316	GMO	Memorandum	Renewable Energy Standard
EO-2019-0317	KCPL	Memorandum in Response to Commission Questions	Renewable Energy Standard
EO-2019-0318	GMO	Memorandum	Renewable Energy Standard
ER-2019-0335	Ameren	Cost of Service Report	Renewable Energy Standard, In-Service Criteria
EA-2019-0371	Ameren	Staff Report	Certificate of Convenience and Necessity
EO-2020-0329	Evergy Missouri Metro	Memorandum	Renewable Energy Standard
EO-2020-0330	Evergy Missouri West	Memorandum	Renewable Energy Standard
EE-2021-0237	Evergy Missouri Metro	Memorandum	Cogeneration Tariff
EE-2021-0238	Evergy Missouri West	Memorandum	Cogeneration Tariff
EE-2021-0180	Ameren Missouri	Memorandum	Electric Meter Variance
ET-2021-0151 and 0269	Evergy	Memorandum, Rebuttal Report	Transportation Electrification
AO-2021-0264	Various	Staff Report	February 2021 Cold Weather Event
EW-2021-0104	n/a	Staff Report	RTO Membership
EW-2021-0077	n/a	Staff Report	FERC Order 2222
EO-2021-0339	Evergy Missouri West	Memorandum	Territorial Agreement
GR-2021-0108	Spire	Rebuttal	Automated Meter Reading Opt-out Tariff
EA-2021-0087	ATXI	Rebuttal Report	Certificate of Convenience and Necessity

Case Number	Utility	Type	Issue
ER-2021-0240	Ameren Missouri	Cost of Service Report Rebuttal	In-Service Bat Mitigation
ER-2021-0312	Empire	Cost of Service Report	Construction Audit – Engineering Review, In-service
EO-2022-0061	Evergy Missouri West	Surrebuttal	Special Rate/ Renewable Energy Standard
EA-2022-0099	ATXI	Rebuttal	Certificate of Convenience and Necessity
EA-2022-0234	NextEra Energy Transmission	Rebuttal	Certificate of Convenience and Necessity
ER-2022-0129	Evergy Missouri West	Direct Rebuttal	Advanced Metering Infrastructure, Reliability, Transmission & Distribution Investment, PISA reporting, Misc. Tariff issues
ER-2022-0130	Evergy Missouri Metro	Direct Rebuttal Surrebuttal/True-Up	Advanced Metering Infrastructure, Reliability, Transmission & Distribution Investment, PISA reporting, Misc. Tariff issues
EE-2022-0329	Ameren Missouri	Memorandum	Variance Request
GR-2022-0179	Spire Missouri	Direct Rebuttal	Metering Infrastructure
ER-2022-0337	Ameren Missouri	Direct Rebuttal Surrebuttal/True-Up	Rush Island, Smart Energy Plan, High Prairie
EA-2023-0017	Grain Belt	Rebuttal	Certificate of Convenience and Necessity
ET-2023-0250	Empire	Memorandum	Cogeneration/ Net Metering Tariff
. GE-2023-0196	Empire District Gas Company	Memorandum	Variance Request
EO-2023-0423 EO-2023-0424	Evergy	Memorandum	Solar Subscription Program
EC-2024-0108	Ameren Missouri	Staff Report	Complaint
EA-2024-0147	ATXI	Memorandum	Certificate of Convenience and Necessity
EO-2024-0231	Ameren Missouri	Memorandum	Renewable Energy Standard

Case Number	Utility	Type	Issue
EF-2024-0021	Ameren Missouri	Rebuttal Surrebuttal	Securitization
ER-2024-0189	Evergy Missouri West	Direct Rebuttal Surrebuttal	In-service, Distribution Reliability, Net Metering
GR-2024-0106	Liberty Midstates	Direct Surrebuttal	Mains, Meters, and Service Lines

Case No. ER-2024-0319

SCHEDULE CME-d2

HAS BEEN DEEMED

CONFIDENTIAL

IN ITS ENTIRETY

Case No. ER-2024-0319

SCHEDULE CME-d3

HAS BEEN DEEMED

CONFIDENTIAL

IN ITS ENTIRETY

Ameren Missouri's
Response to MPSC Data Request - MPSC
EO-2022-0215
Staffs Investigation of Rush Island

No.: MPSC 0014

Please explain Ameren's plan, based on the court ruling and the decision to retire Rush Island early, to avoid having inadequate capacity to meet its customer's needs and how it plans to meet MISO reserve margins. Requested by Jordan Hull (jordan.hull@psc.mo.gov).

RESPONSE

Prepared By: Matt Michels
Title: Director, Corporate Analysis
Date: March 17, 2022

Please see response to MPSC 0013. Also note that to the extent Ameren Missouri would expect to fall short of its resource adequacy requirement in MISO in a given year, it may rely on market purchases of capacity.