

STAFF MEMORANDUM

TO: Missouri Public Service Commission
Official Case File No. EC-2026-0156

FROM: Trevor Rucker, Associate Engineer, Engineering Analysis Department
Shawn E. Lange, PE, Engineer Manager, Engineering Analysis Department

/s/ Trevor Rucker / March 13, 2026
Engineering Analysis Dept. / Date

/s/ Shawn E. Lange, PE / March 13, 2026
Engineering Analysis Dept. / Date

SUBJECT: Staff Investigation and Report

DATE: March 13, 2026

INTRODUCTION AND BACKGROUND

On December 23, 2025, the City of Fulton, Hannibal Board of Public Works, Kirkwood Electric, the City of Marcelline, and the City of New Madrid (collectively “Missouri Public Power” or “MPP”), filed a Formal Complaint (“Complaint”) with the Missouri Public Service Commission (“Commission”) against Union Electric Company, d/b/a Ameren Missouri (“Ameren Missouri”). In its Complaint, MPP alleges that Ameren Missouri violated its tariff, the Commission’s May 21, 1971, Order found at 15 Mo. P.S.C. (N.S.) 505, Case No. 17,139 (effective June 2, 1971), and the Amended Report and Order issued by the Commission on August 7, 2024, in Case No. EF-2024-0021. MPP alleges that Ameren Missouri committed these violations by failing to obtain all necessary permits and approvals from all governmental and regulatory authorities having jurisdiction and failed to comply with applicable federal and state air quality control standards, causing the October 15, 2024, retirement of Ameren Missouri’s Rush Island Energy Center (“Rush Island”). MPP further alleges that the retirement of Rush Island caused capacity shortfalls in the Midcontinent Independent System Operator, Inc. (“MISO”) Planning Reserve Auction (“PRA”) for Local Resource Zone 5 (“LRZ 5”) for the fall and spring seasons of Planning Year (“PY”) 2024-2025 which resulted in damages to each of the cities of MPP. On February 13, 2026, Ameren Missouri filed its Answer to MPP’s Complaint.

Rush Island was a coal-fired generating facility with two units. Ameren Missouri replaced boiler components on Unit 1 in 2007 and on Unit 2 in 2010, which expanded the capacity of

Rush Island.¹ In January 2011, the United States Department of Justice, on behalf of the United States Environmental Protection Agency, filed a complaint against Ameren Missouri in the United States District Court for the Eastern District of Missouri (“District Court”) alleging that Ameren Missouri violated provisions of the Clean Air Act. The complaint claimed that the boiler component replacements were major modifications that required Ameren Missouri to obtain permits and install pollution controls at Rush Island.² On September 30, 2019, the District Court determined that the Ameren Missouri had violated the Clean Air Act by making major modifications that expanded the capacity of Rush Island but not applying for a required Prevention of Significant Deterioration (“PSD”) permit. The District Court ordered Ameren Missouri to apply for a PSD permit and propose flue gas desulfurization (“FGD”) and Best Available Control Technology in its PSD permit.³ Ameren Missouri determined that it would be cheaper to retire Rush Island early than to install FGD equipment.⁴ In December 2021, Ameren Missouri filed a motion with the District Court to allow Ameren Missouri to retire Rush Island instead of installing FGD equipment, and the District Court granted Ameren Missouri’s request on September 30, 2023.⁵

EXECUTIVE SUMMARY

This report provides the investigation and findings of the Commission’s Staff (“Staff”) regarding MPP’s Complaint against Ameren Missouri. MPP alleges that damages were incurred by the cities that make up MPP due to the early retirement of Rush Island which MPP alleges caused capacity shortages in the 2024/2025 MISO PRA for LRZ 5. Staff found that the retirement of Rush Island contributed to capacity deficiencies for the fall and spring seasons in PY 2024-2025 in LRZ 5, but did not find that the retirement of Rush Island was the sole cause of the inadequate capacity.

¹ Components included reheaters, economizer, air preheater, and lower slope (Unit 1 only) – Paragraph 17, page 27 of Amended Report and Order, EF-2024-0021.

² Paragraph 21, page 28 of Amended Report and Order, EF-2024-0021.

³ Paragraph 24, pages 28-29 of Amended Report and Order, EF-2024-0021.

⁴ Paragraphs 26-27, pages 29-30 of Amended Report and Order, EF-2024-0021.

⁵ Paragraphs 28-29, page 30 of Amended Report and Order, EF-2024-0021.

STAFF’S INVESTIGATION

As part of its investigation, Staff issued and reviewed 30 data requests to both Ameren Missouri and MPP. The data requests pertained to if the members of MPP are Ameren Missouri customers, MISO accreditation changes, compliance with MISO resource adequacy requirements, and capacity import limitations for MISO LRZ 5. Staff’s investigation focused on the impact of Ameren Missouri’s retirement of Rush Island on the capacity requirements for the fall and spring seasons in LRZ 5 and in the MISO PRA for PY 2024-2025.

The clearing prices for LRZ 5 were the seasonal Cost of New Entry (“CONE”) due to inadequate capacity to meet the Local Clearing Requirement (“LCR”) for LRZ 5, which is shown in Figure 1 below. CONE is an industry-wide term, used to indicate the current, annualized, capital cost of constructing a power plant. The plant used to estimate the annual CONE is an advanced combustion turbine.⁶ The seasonal CONE is calculated by dividing the annual CONE by the number of days in the season(s) with inadequate capacity.

Zone	Local Balancing Authorities	Summer	Fall (Price \$/MW-Day)	Winter	Spring
1	DPC, GRE, MDU, MP, NSP, OTP, SMP	30.00	15.00	0.75	34.10
2	ALTE, MGE, UPPC, WEC, WPS, MIUP	30.00	15.00	0.75	34.10
3	ALTW, MEC, MPW	30.00	15.00	0.75	34.10
4	AMIL, CWLP, SIPC, GLH	30.00	15.00	0.75	34.10
5	AMMO, CWLD	30.00	719.81	0.75	719.81
6	BREC, CIN, HE, IPL, NIPS, SIGE	30.00	15.00	0.75	34.10
7	CONS, DECO	30.00	15.00	0.75	34.10
8	EAI	30.00	15.00	0.75	34.10
9	CLEC, EES, LAFA, LAGN, LEPA	30.00	15.00	0.75	34.10
10	EMBA, SME	30.00	15.00	0.75	34.10
ERZ	KCPL, OPPD, WAUE (SPP), PJM, OVEC, LGEE, AECL, SPA, TVA	30.00	15.00	0.75	34.10

Highlighted values are CONE pricing

Figure 1: PRA Results for PY 2024-2025⁷

⁶ Slide 4, MISO Cost of New Entry (CONE) Planning Year 2024/2025, dated October 4, 2023 – https://cdn.misoenergy.org/20231004%20RASC%20Item%2004c%20CONE%20Update%20PY24-25630431.pdf? t_id=zOa72lwTYjp44a1j3vOjYg%3d%3d& t_uuid=4YkInyBoS8GF37o2JUiziA& t_q=cone& t_tags=language%3aen%2csiteid%3a11c11b3a-39b8-4096-a233-c7daca09d9bf%2candquerymatch& t_hit.id=Optics_Models_Find_RemoteHostedContentItem/630431& t_hit.pos=11

⁷ Slide 3, MISO Planning Resource Auction Results for Planning Year 2024-25, reposted April 26, 2024 – <https://cdn.misoenergy.org/2024%20PRA%20Results%20Posting%2020240425632665.pdf>.

The contributing factors leading to inadequate capacity in LRZ 5 for the fall season of PY 2024-2025 are outlined in the graph in Figure 2 below. ** [REDACTED]

**⁸ The two other major contributing factors were an increased LCR and Planned Outage (“PO”) exclusions. Higher accreditation reduced the amount of inadequate capacity, with the overall deficit of 872 MW below the LCR.

If Rush Island was not retired, there would have been adequate capacity in LRZ 5 for the fall season of PY 2024-2025. However, the increased LCR, driven by capacity import limitations, was the largest factor contributing to inadequate capacity. A smaller LCR, possibly combined with fewer or no planned outages, also could have allowed for sufficient capacity. Therefore, the retirement of Rush Island was not solely responsible for the inadequate capacity.

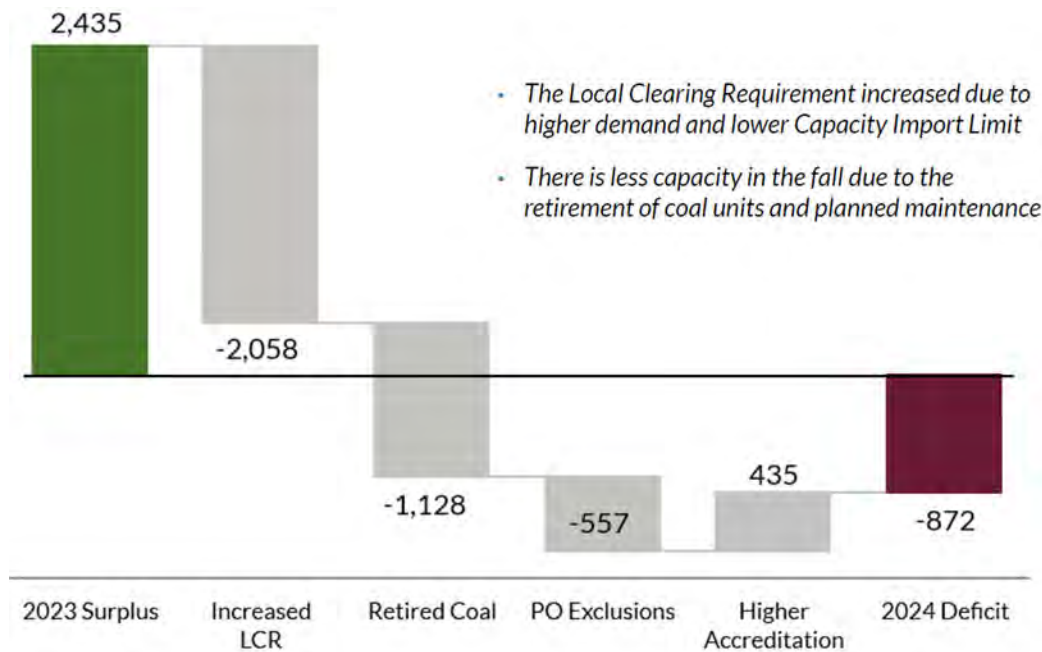


Figure 2: LRZ 5 Fall Capacity Changes (MW)⁹

⁸ ** [REDACTED]

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⁹ Slide 5, MISO Planning Resource Auction Results for Planning Year 2024-25, reposted April 26, 2024 – <https://cdn.misoenergy.org/2024%20PRA%20Results%20Posting%2020240425632665.pdf>

The graph in Figure 3 below shows the contributing factors leading to inadequate capacity in LRZ 5 for the spring season of PY 2024-2025. ** [REDACTED]

[REDACTED] **¹⁰ An increased LCR as well as other retirements and lower accreditation led to an overall capacity deficit of 196 MW below the LCR.

The retirement of Rush Island was the largest contributor to inadequate capacity in LRZ 5 for the spring season of PY 2024-2025. Once again, if Rush Island was not retired, there would have been adequate capacity in LRZ 5. However, some combination of a smaller LCR, other generating units not retiring, and/or higher accreditation could have also led to sufficient capacity in LRZ 5. Thus, the retirement of Rush Island again cannot be determined to be the sole cause for the inadequate capacity

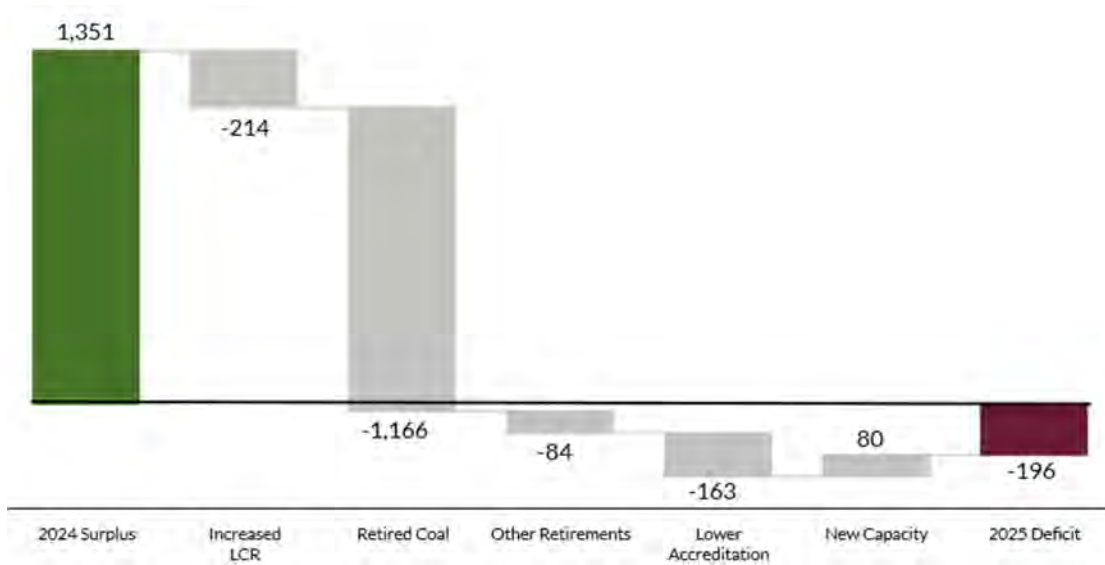


Figure 3: LRZ 5 Spring Capacity Changes (MW)¹¹

Figure 4 below outlines the changes to the LCRs for each season from PY 2023-2024 to PY 2024-2025 for LRZ 5. Increased peak demand forecasts for LRZ 5 led to Local Reliability Requirements (“LRR”)¹² that were 4.8% and 2.3% higher for the fall and spring seasons, respectively. There was a 29.6% decrease to the Zonal Import Ability (“ZIA”) for the fall season, which led to an overall LCR increase of 47.2%. The spring LCR also increased by 3.7%. Figure 5 outlines changes

¹⁰ ** [REDACTED]

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¹¹ Slide 43, MISO Planning Resource Auction Results for Planning Year 2024-25, reposted April 26, 2024 – <https://cdn.misoenergy.org/2024%20PRA%20Results%20Posting%2020240425632665.pdf>

¹² The LRR is the minimum amount of unforced capacity for an LRZ to meet its loss of load expectation (“LOLE”) for each season, without considering transmission ties to systems outside of the LRZ.

to the capacity import limit (“CIL”) for LRZ 5, with the CIL being determined by the Moro-Miles 138 kV monitored element with the Roxford-Moro 345 kV contingency. The CIL is equal to the ZIA in this instance.

	Summer				Fall			
	2024	2023	Difference MW	%	2024	2023	Difference MW	%
(A) Zonal Coincident Peak Forecast (ZCPF)	7,532.3	7,450.3			6,911.9	6,591.9		
(B) Transmission Loss (TL) for ZCPF (MW)	147.9	130.7			168.2	115.2		
(C)=(A)+(B) LRZ Peak Demand	7,680.2	7,581.0	99.2	1.3%	7,080.1	6,707.1	373.0	5.6%
(D) LRR UCAP/LRZ Peak Demand from LOLE	1,331	1,333			1,441	1,452		
(E)=(C)*(D) Local Reliability Requirement (LRR)	10,222.3	10,105.5	116.9	1.2%	10,202.4	9,738.7	463.7	4.8%
(F) Zonal Import Ability (ZIA)	3,208.0	3,576.0	(368.0)	-10.3%	3,786.0	5,380.0	(1,594.0)	-29.6%
(G) Controllable Exports	0.0	0.0			0.0	0.0		
(H)=(E)-(F)-(G) Local Clearing Requirement (LCR)	7,014.3	6,529.5	484.9	7.4%	6,416.4	4,358.7	2,057.7	47.2%

	Winter				Spring			
	2024-25	2023-24	Difference MW	%	2025	2024	Difference MW	%
(A) Zonal Coincident Peak Forecast (ZCPF)	6,397.0	6,483.2			6,023.0	5,921.4		
(B) Transmission Loss (TL) for ZCPF (MW)	247.8	188.3			117.6	109.8		
(C)=(A)+(B) LRZ Peak Demand	6,644.8	6,671.5	(26.7)	-0.4%	6,140.6	6,031.2	109.4	1.8%
(D) LRR UCAP/LRZ Peak Demand from LOLE	1,285	1,474			1,618	1,610		
(E)=(C)*(D) Local Reliability Requirement (LRR)	8,538.6	9,833.8	(1,295.2)	-13.2%	9,935.5	9,710.2	225.3	2.3%
(F) Zonal Import Ability (ZIA)	4,477.0	3,811.0	666.0	17.5%	3,892.0	3,881.0	11.0	0.3%
(G) Controllable Exports	0.0	0.0			0.0	0.0		
(H)=(E)-(F)-(G) Local Clearing Requirement (LCR)	4,061.6	6,022.8	(1,961.2)	-32.6%	6,043.5	5,829.2	214.3	3.7%

Figure 4: LRZ 5 LCR Changes¹³

LRZ5	Monitored Element	Monitored Element Rating	Contingency	CIL
Summer 2024	Moro - Miles 138 kV	305 MVA	Roxford - Moro 345 kV	3208
Fall 2024	Moro - Miles 138 kV	305 MVA	Roxford - Moro 345 kV	3786
Winter 2024/25	Moro - Miles 138 kV	329 MVA	Roxford - Moro 345 kV	4477
Spring 2025	Moro - Miles 138 kV	305 MVA	Roxford - Moro 345 kV	3892

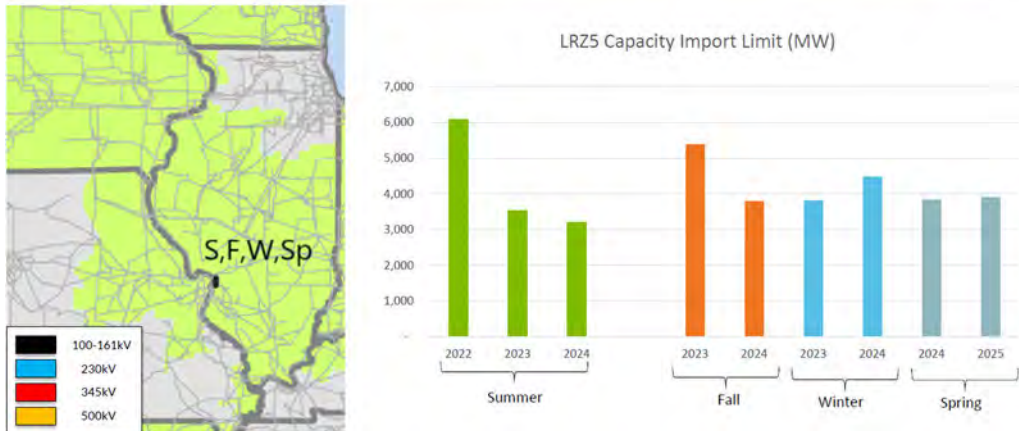


Figure 5: LRZ 5 Capacity Import Limits¹⁴

¹³ Slide 44, MISO Planning Resource Auction Results for Planning Year 2024-25, reposted April 26, 2024 – <https://cdn.misoenergy.org/2024%20PRA%20Results%20Posting%2020240425632665.pdf>

¹⁴ Slide 45, MISO Planning Resource Auction Results for Planning Year 2024-25, reposted April 26, 2024 – <https://cdn.misoenergy.org/2024%20PRA%20Results%20Posting%2020240425632665.pdf>

CONCLUSION

As found in Commission Case No. EF-2024-0021, Ameren Missouri violated the Clean Air Act which led to the early retirement of Rush Island. Staff concludes that the retirement of Rush Island contributed to inadequate capacity to meet the LCRs in LRZ 5 for the fall and spring seasons in PY 2024-2025, but Staff cannot conclude that the retirement of Rush Island was the sole cause of the capacity deficiencies. Staff further concludes that inadequate capacity to meet the LCR for LRZ 5 caused increased clearing prices (i.e. seasonal CONE) in the 2024/2025 MISO PRA for LRZ 5. Staff additionally concludes that the increased clearing prices in the 2024/2025 MISO PRA for LRZ 5 could have caused MPP members to incur increased costs for the fall and spring seasons, but Staff will not speculate on, nor is there sufficient evidence to determine, the amount of the increased costs or to what degree the retirement of Rush Island contributed to the increased costs.

