

Exhibit No. 103

PSC Staff – Exhibit 103
Shawn E. Lange
Rebuttal Testimony
File No. EA-2022-0328

Exhibit No.:
Issue(s): *In-service criteria,
Project Concerns*
Witness: *Shawn E. Lange*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Rebuttal Testimony*
Case No.: *EA-2022-0328*
Date Testimony Prepared: *January 17, 2023*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

SHAWN E. LANGE, PE

**EVERGY MISSOURI WEST, INC.,
d/b/a Evergy Missouri West**

CASE NO. EA-2022-0328

*Jefferson City, Missouri
January 2023*

**** Denotes Confidential Information ****

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EVERGY MISSOURI WEST, INC.,
d/b/a Evergy Missouri West
CASE NO. EA-2022-0328**

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1 **REBUTTAL TESTIMONY**

2 **OF**

3 **SHAWN E. LANGE, PE**

4 **EVERGY MISSOURI WEST, INC.,**
5 **d/b/a Evergy Missouri West**

6 **CASE NO. EA-2022-0328**

7 Q. Please state your name and business address.

8 A. My name is Shawn E. Lange and my business address is Missouri Public Service
9 Commission, P.O. Box 360, Jefferson City, MO 65102.

10 Q. What is your present position with the Missouri Public Service Commission
11 (“Commission”)?

12 A. I am a Senior Professional Engineer in the Engineering Analysis Department,
13 Industry Analysis Division.

14 Q. Would you please review your educational background and work experience?

15 A. A list of the cases in which I have filed testimony and my credentials can be
16 found in Schedule SEL-r1.

17 **EXECUTIVE SUMMARY**

18 Q. What is the purpose of your testimony?

19 A. The purpose of my testimony is to address Staff’s concerns with In-service
20 Criteria and Environmental aspects associated with the Persimmon Creek acquisition.

21 **IN-SERVICE CRITERIA**

22 Q. What are in-service criteria?

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

4 Q. Where does the phrase “fully operational and used for service” come from?

5 A. The phrase comes from Section 393.135, RSMo. 2000, a statute that was adopted
6 by Initiative, Proposition No. 1, on November 2, 1976. Section 393.135, RSMo. 2000, provides
7 as follows:

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

14 Q. Has Evergy Missouri West, Inc., d/b/a Evergy Missouri West (“EMW” or
15 “Company”) provided their perspective of applicable in-service criteria?

16 A. Staff requested EMW to provide its proposed in-service criteria for this project
17 in Data Request (DR) No. 0007. EMW’s response was:

18 From a technical and engineering criteria the site is already in-service
19 and producing electric energy in the SPP. The site was commissioned in
20 2018 and has been operating in bulk-electric power service since with
21 historical capacity factors 50%+. We would propose that the site is
22 already in technical in-service and this is an operating CCN for an
23 operating asset.

24 As an existing asset Missouri West would propose to In-Service the asset
25 as soon as is practicable after the transaction closes and the units of
26 property are properly setup on Missouri West’s books and records.
27

28 In response, Staff issued DR No. 0007.1 to EMW asking for information that
29 corresponds to in-service criteria that were agreed to and were used to determine in-service of

1 the most recent Ameren Missouri wind farm. EMW has objected to that DR but provided
2 responsive information.¹

3 Q. Has Staff used in-service criteria to determine “fully operational and used for
4 service” for existing, operating facilities?

5 A. Yes. Staff has used in-service criteria on acquisition of existing, operating
6 generation facilities several times. For example, in ER-2007-0002, Staff used in-service criteria
7 on many existing, operating CTGs that Ameren Missouri purchased from another party.
8 Further, Staff evaluated in-service criteria for Aquila’s acquisition of Crossroads in
9 ER-2010-0356. The West Gardner units of Evergy Metro had construction completed in
10 April 2003² and Staff evaluated in-service criteria in ER-2006-0314. The Osawatomie unit 1
11 of Evergy Metro had construction completed in June 2003³ and Staff evaluated in-service
12 criteria in ER-2006-0314.

13 Q. If the Commission grants a Certificate of Convenience and Necessity (“CCN”),
14 does Staff have a recommendation for the Commission with regard to in-service criteria?

15 A. Yes. For any CCN granted in this case, Staff recommends that the Commission
16 order that the in-service criteria contained in attached Schedule SEL-r2 are appropriate for use
17 in a future case to determine whether the Persimmon Creek project is in-service. Staff prefers
18 to have in-service criteria that the parties can agree to prior to the case(s) in which the plant is
19 put into rate base, it is unclear whether that will happen in this case.

¹ EMW response to Staff DR No. 0007.1.

² ER-2006-0314 Direct Testimony of Michael E. Taylor Schedules 2-5.

³ ER-2006-0314 Direct Testimony of Michael E. Taylor Schedule 6.

1 **ENVIRONMENTAL CONCERNS**

2 Q. Does Staff have additional concerns with the project?

3 A. Yes, Staff has some environmental concerns pertaining to the location of the
4 project.

5 Q. What Environmental concerns does Staff have?

6 A. ** [REDACTED]
7 [REDACTED]
8 [REDACTED]

9 [REDACTED]
10 [REDACTED] 4**

11 Q. Why is this language concerning?

12 A. This language is concerning partly because of additional language that provides
13 additional context in the report/memo. The report/memo states:

14 ** [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]

21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED]
27 [REDACTED]

⁴ Every Response to Staff DR No. 0007.1 Summary of Persimmon Creek Wind Farm 1 Technical Diligence Section 3.1.2.

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[REDACTED]

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED] ^{5**}
13 (Emphasis added.)

14 Q. Has Staff seen similar issues on other projects?

15 A. Yes. ** [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED] **

19 Q. Should the Commission grant a CCN, does the Staff have a recommendation for
20 the Commission with regard to environmental concerns?

21 A. ** [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED]

⁵ Confidential Evergy Response to Staff DR No. 0007.1 Summary of Persimmon Creek Wind Farm 1 Technical Diligence Section 4.4.1

Rebuttal Testimony of
Shawn E. Lange, PE

1

[REDACTED]

2

[REDACTED]

3

[REDACTED] **

4

Q. Does this conclude your rebuttal testimony?

5

A. Yes, it does.

CREREDENTIALS AND CASE PARTICIPATION OF
SHAWN E. LANGE, PE

PRESENT POSITION:

I am a Senior 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

*cont'd \ Case Participation of
Shawn E. Lange, PE*

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	

*cont'd \ Case Participation of
Shawn E. Lange, PE*

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

*cont'd \ Case Participation of
Shawn E. Lange, PE*

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	Evergy Metro and Evergy 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	Staff Direct Testimony	Variable Fuel Costs

Wind Turbine In-Service Criteria

1. For each wind turbine to be considered for inclusion in rate base, the criteria in part 2, 3, 4, 5, and 6 shall be met.
2. Mechanical completion has been achieved, meaning:
 - a. The turbine and its support tower are assembled, erected, and installed in accordance with the turbine supplier's technical specifications and quality assurance procedures;
 - b. Utility has installed, or caused to be installed, all necessary communication facilities needed to achieve SCADA functionality; and
 - c. The Mechanical Completion Checklist has been satisfied and the turbine is ready to commence commissioning.
3. The turbine has been commissioned and a Commissioning Completion Certificate has been completed.
4. An operational test of the turbine as outlined in this part 4 has been successfully completed on at least ten percent of the total number of turbines in a Wind Farm for which a Commissioning Completion Certificate has been issued for each such turbine. The operational test shall be completed using the plant SCADA and turbine-mounted sensing and monitoring equipment. Each tested turbine shall have sustained for two consecutive hours a power output of at least 90% of the turbine supplier's guaranteed output as determined by wind speed observed at or above the Predicted Mean Turbine Hub-height Wind Speed and the Air Density, subject to the following:
 - a. Failure of any turbine to achieve the operational test provided for by this part 4 shall mean that the turbine shall be repaired, if needed, and retested. In addition, the test population size shall be increased from ten percent to twenty percent and each of the tested turbines shall comply with this part 4.
5. Sufficient Interconnection Facilities exist to carry the Wind Farm energy output at the nameplate capacity from the completed turbines into the distribution/transmission system at the point of interconnection, the turbines have been synchronized to the grid, and conditional energy resource interconnection service (ERIS) is available on the transmission system.
6. Review of operating Data. The Company will provide Operating Data for each commissioned turbine and its review of such data.
7. Definitions:
 - a. "Air Density" shall mean the average air density at average hub elevation as determined by the wind resource assessment report or by field measurement equipment.

- b. "Commissioning Completion Certificate" has the meaning given it in the Turbine Supply Agreement.
- c. "ERIS" means conditional Energy Resource Interconnection Service as defined in Attachment Attachment V, Section 1, of the Southwest Power Pool's Open Access Transmission Tariff.
- d. "Interconnection Facilities" shall mean those facilities that interconnect the Wind Farm generator step-up transformer high voltage terminals to the point of interconnection to the grid.
- e. "Mechanical Completion Checklist" has the meaning given it in the Turbine Supply Agreement.
- f. "Operating Data" shall mean the quantity of electricity produced by each Turbine, the average wind speed at each Turbine, and the output voltage at each Turbine, in each case on an hourly interval.
- g. "Predicted Mean Turbine Hub-height Wind Speed" shall mean the mean wind speed at the turbine's hub height as predicted in the pre-construction wind resource assessment.
- h. "Wind Farm" shall mean a collection of completed wind turbine generators aggregated into one point of interconnection to the grid.