

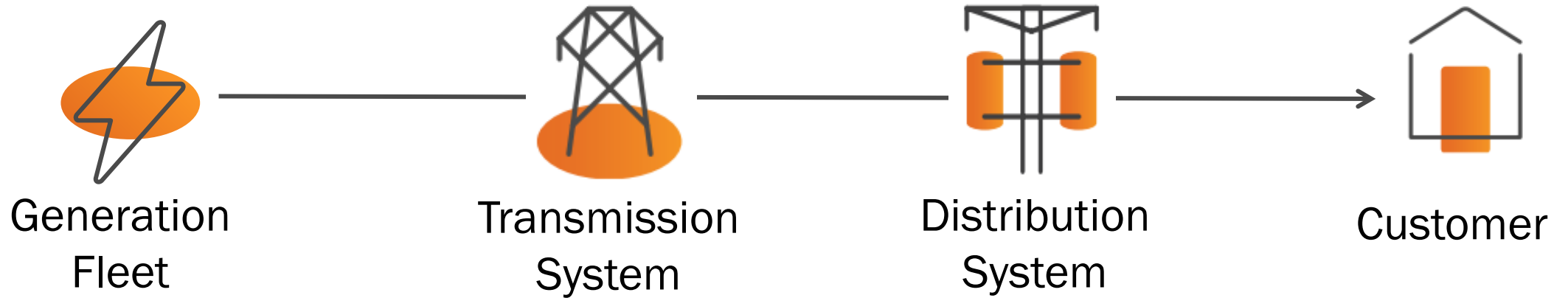
# Proposed Revision: SD-4 Electric System Reliability

Presented to: Systems Committee

November 1, 2023



# SD-4: Reliability metrics



Whole system with a future focus

# Summary

Current

Proposed



Overall

Customer energy requirements met 100% of the time



No change



Generation

Equivalent Availability Factor:

- Baseload only
- 36-month average
- 90% or greater



Equivalent Forced Outage Rate:

- All utility scale owned generation
- 12-month
- Mid second quartile (~8% or less)



Transmission

Comply with NERC transmission reliability standards



No change



Distribution

SAIDI:

- 36-month average
- Excludes major event days
- Top Quartile - 90 minutes



SAIDI:

- 12-month
- Excludes major event days
- Top Quartile

SAIFI:

- 12-month
- Excludes major event days
- Top quartile



# Reliability: Generation

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## Equivalent Forced Outage Rate (EFOR)

*Measures the probability that a group of units will not meet their generating requirements because of force outages or derates.*

### Why this metric?

- Focus on unplanned outages
- Measures performance of ALL owned generation
- Recognizes the importance of asset investment
- Aligns with SPP future capacity policy
- Industry standard measurement

**Target: Mid-second quartile (Currently ~8%)**

# Reliability: T&D

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In addition to SAIDI...

**Second distribution metric: SAIFI**

- Frequency of sustained customer outages.
- Adds a focus to the number of outages as well as the duration

**Target: First quartile**

SAIDI ~90 Minutes

SAIFI ~0.9 Outages



# Key outcomes


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- **Measurement** of reliability across all key OPPD systems
- Clear **alignment with SPP** capacity accreditation
- Emphasizes **maintenance-focused planning**
- Drives enhanced focus to reduce **unplanned outages**, both in generation and T&D
- **Drives continuous improvement** for a better customer experience

# System Committee Review: October 4, 2020

Is there anything that requires further clarification?

Is there anything that the committee should consider before moving this forward for public review and comment?

	<b>OMAHA PUBLIC POWER DISTRICT Board Policy</b>	<b>Category:</b>	Strategic Direction
	<b>Policy No. and Name:</b> <b>SD-4: Reliability</b>	<b>Monitoring Method:</b>	System Management and Nuclear Oversight Committee Board Report
		<b>Frequency:</b>	Annually
<b>Date of Approval:</b>	July 16, 2015 October 13, 2016 April 21, 2022 [Enter Date]	<b>Resolution No.:</b>	6070 6144 6494 [Enter Number]

The growth and well-being of vibrant and thriving communities depends upon safe, reliable, and resilient energy sources at a reasonable cost. As our communities become more reliant on electric services, the reliability of that service must also continue to improve. The Generation Fleet, Transmission System, and Distribution System are all elements of OPPD's vertically integrated systems to deliver energy service to our customer-owners. And the reliability of each of these system elements contributes to overall reliability of our service.

Therefore, to demonstrate reliable operations of their electric utility system by OPPD Shall:

- Assure all customer energy requirements are met through the use of its generation resources and purchased power portfolio 100 percent of the time.

#### Generation

- Maintain OPPD's owned generation fleet Equivalent Forced Outage Rate (EFOR\*) at or below the middle of the second quartile of the benchmark fleet of comparable generation; and

#### Transmission

- Operate and maintain the system in accordance with all applicable NERC Reliability Standards; and

#### Distribution

- Maintain the System Average Interruption Duration Index (SAIDI\*) to top quartile performance for electric utilities, excluding Major Event Days; and
- Maintain the System Average Interruption Frequency Index (SAIFI\*) to top quartile performance for electric utilities, excluding Major Event Days.

All measures will be tracked on a 12 month rolling average basis.

\* Defined in glossary

# Appendix



# Reliability in Resilience

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## What is it?

The ability of the system and its components to *prepare for, withstand, respond to, adapt to, and quickly recover* from a non-routine event.

### SD-9 Integrated System Planning

System Capacity & Margin  
System Expansion Planning  
System Redundancy

### SD-4 Electric System Reliability

Asset Inspection, Management Programs  
Preventive Maintenance  
Engineering Design Standards  
Event Response Plans

Prepare

Withstand

Respond

Adapt

Recover