



# SD-4: Reliability Monitoring Report

System Management & Nuclear Oversight Committee Report

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COO & VP Utility Operations

# Summary SD-4: Reliability

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 delivery energy services to our customer-owners. The reliability of each of these system elements contributes to the overall reliability of our service.

Therefore, to demonstrate reliable operations of its electric utility system, 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**; and

## Generation

- Maintain OPPD's owned generation fleet **Equivalent Forced Outage Rate (EFOR\*)** at or below the middle of the **second quartile** of a 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 a benchmark of comparable electrical utilities, excluding Major Event Days; and
- Maintain the **System Average Interruption Frequency Index (SAIFI\*)** to **top quartile performance** for a benchmark of comparable electric utilities, excluding Major Event Days.

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

# 2023 Performance

## SD-4 Performance

- ✓ Met customer energy requirements 100% of the time
- ✗ Improvement needed to reduce forced generation outages
- ✓ Minimized duration of outages for customers
- ✓ Minimized frequency of outages for customers
- ✓ Met applicable NERC reliability standards

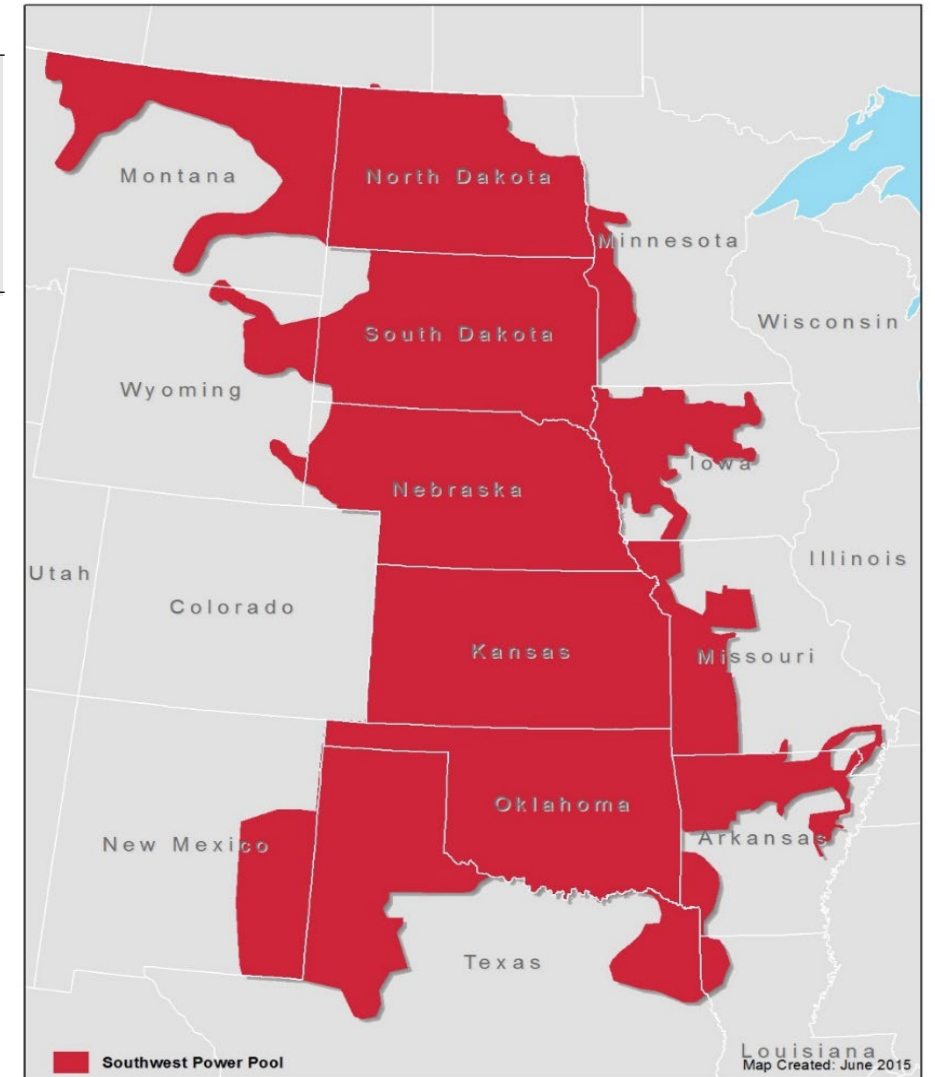
*OPPD shall assure  
generation resources and  
purchase power portfolio  
meets customer energy  
demand 100% of the time.*



# Energy Supply

OPPD has met supply requirements in a challenging environment that includes weather events, increased demand and increasing capacity requirements that ensure system reliability.

- ✓ SPP real-time balancing of generation and load
- ✓ SPP 115% planning reserve margin (Summer/Winter)
- ✓ Transmission reservations under SPP tariff provide a firm “lane in the highway” to deliver energy to load



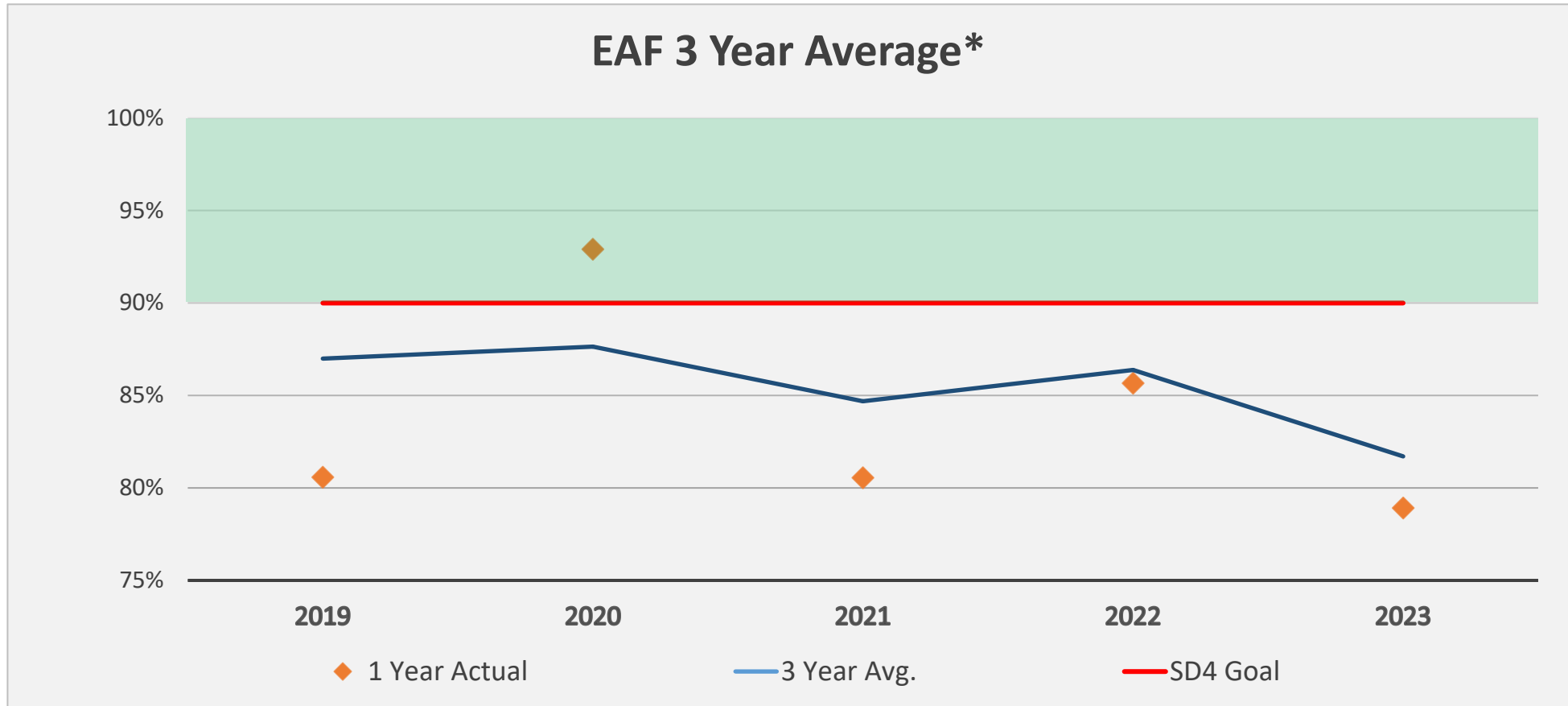
# Generation Reliability

Nebraska City Unit 2 Maintenance Outage 2023



# Equivalent Availability Factor (EAF): *Previous Metric*

Percentage of time generation was available

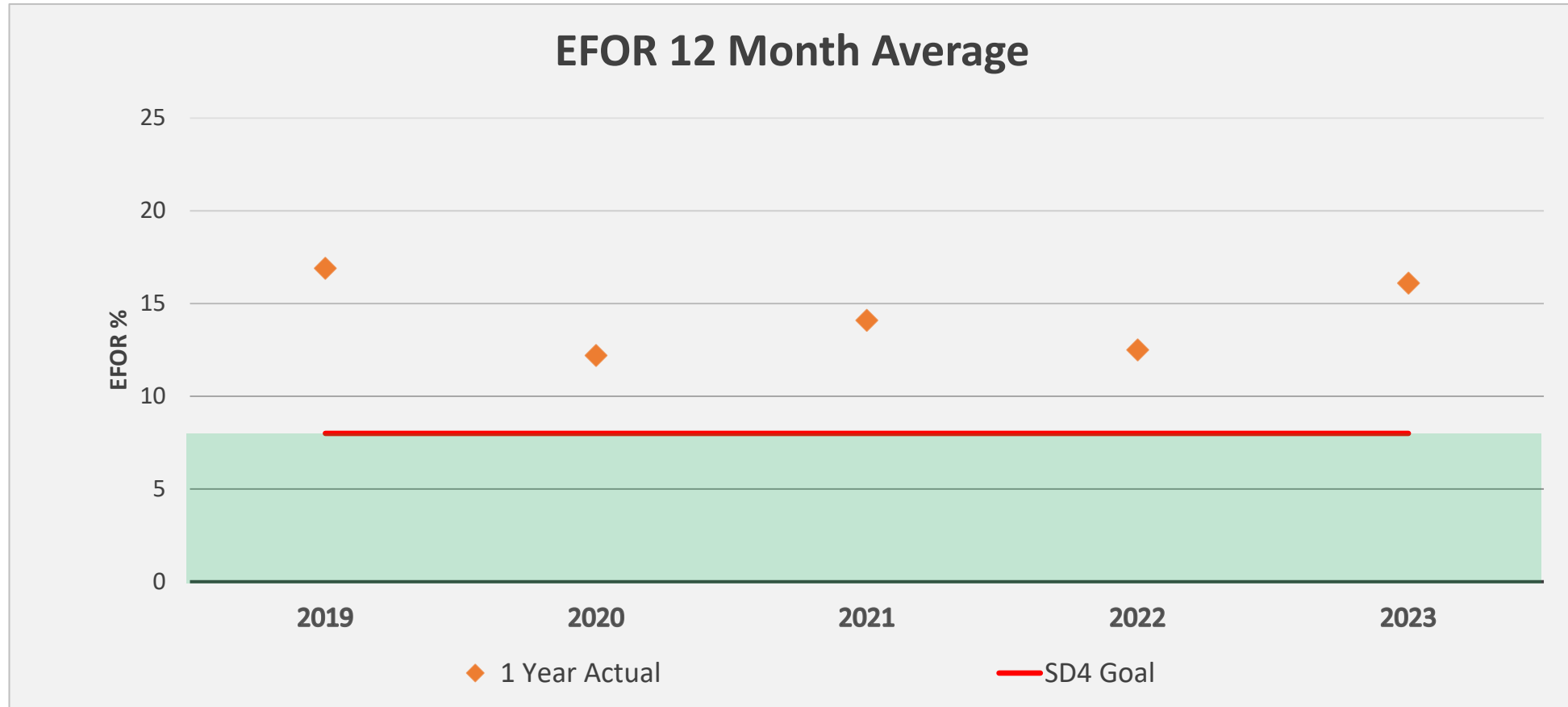


2023 EAF 3 year was **81.7%**, 3<sup>rd</sup> Quartile Performance

\* Coal Stations Only

# Equivalent Forced Outage Rate (EFOR):

*Ratio of Forced Outage Hours to Service Hours*



2023 EFOR was **16.1%**, 3<sup>rd</sup> Quartile Performance

\*Includes all owned generation



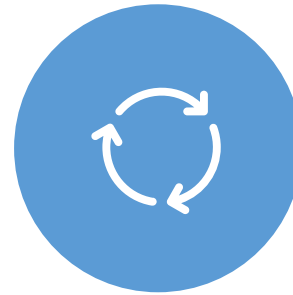
# Improving Generation Reliability



Predictive, pro-active  
planning



Front-line engagement to  
identify and fix problems -  
**Generation Reliability  
Improvement Program**



Comprehensive  
equipment review based  
on industry standards



SD-4 metric that allows  
us to take more time in  
planned outages to  
address issues

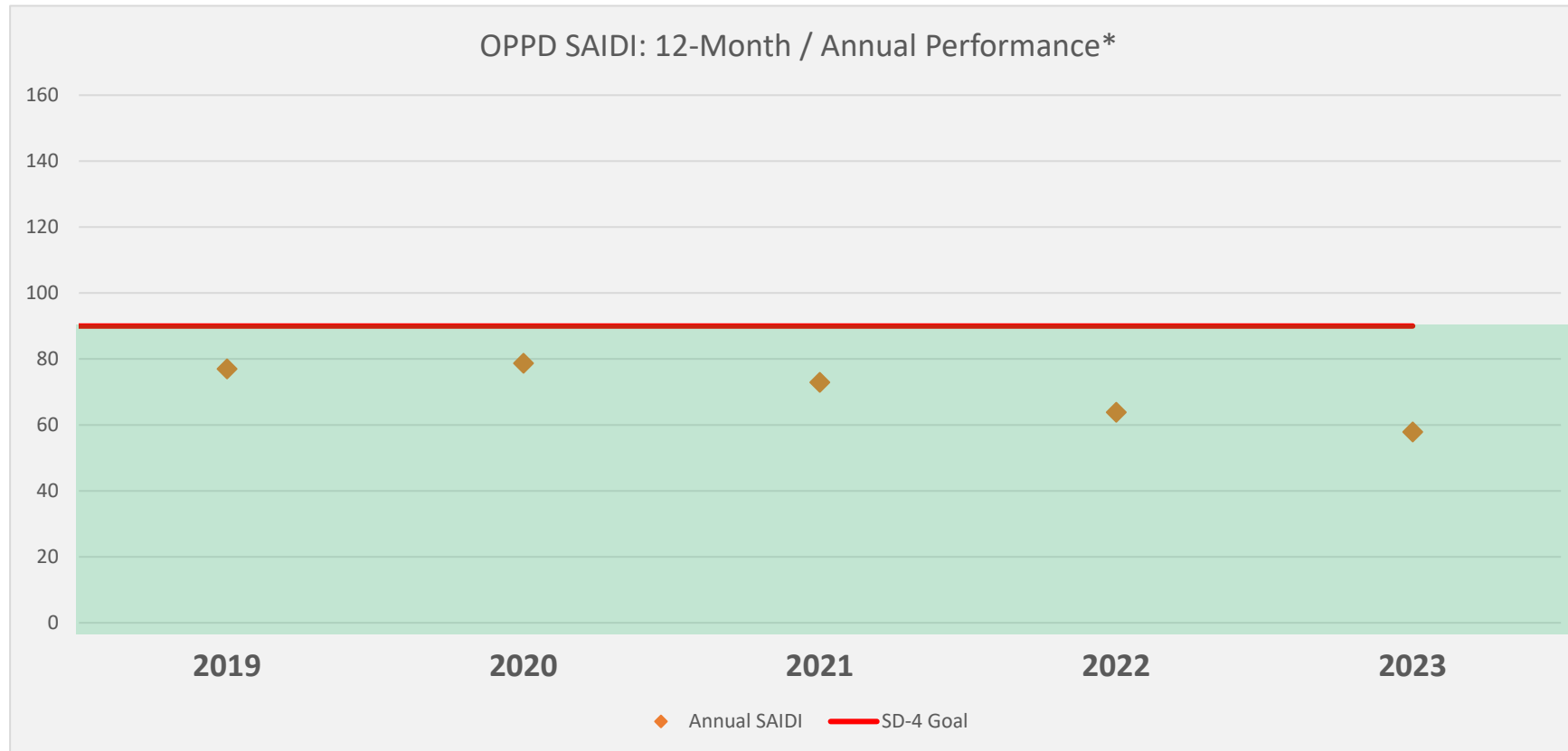
*Comprehensive approach designed to help OPPD identify and  
address more reliability risks quickly*

# Electric System Reliability



# System Average Interruption Duration Index (SAIDI):

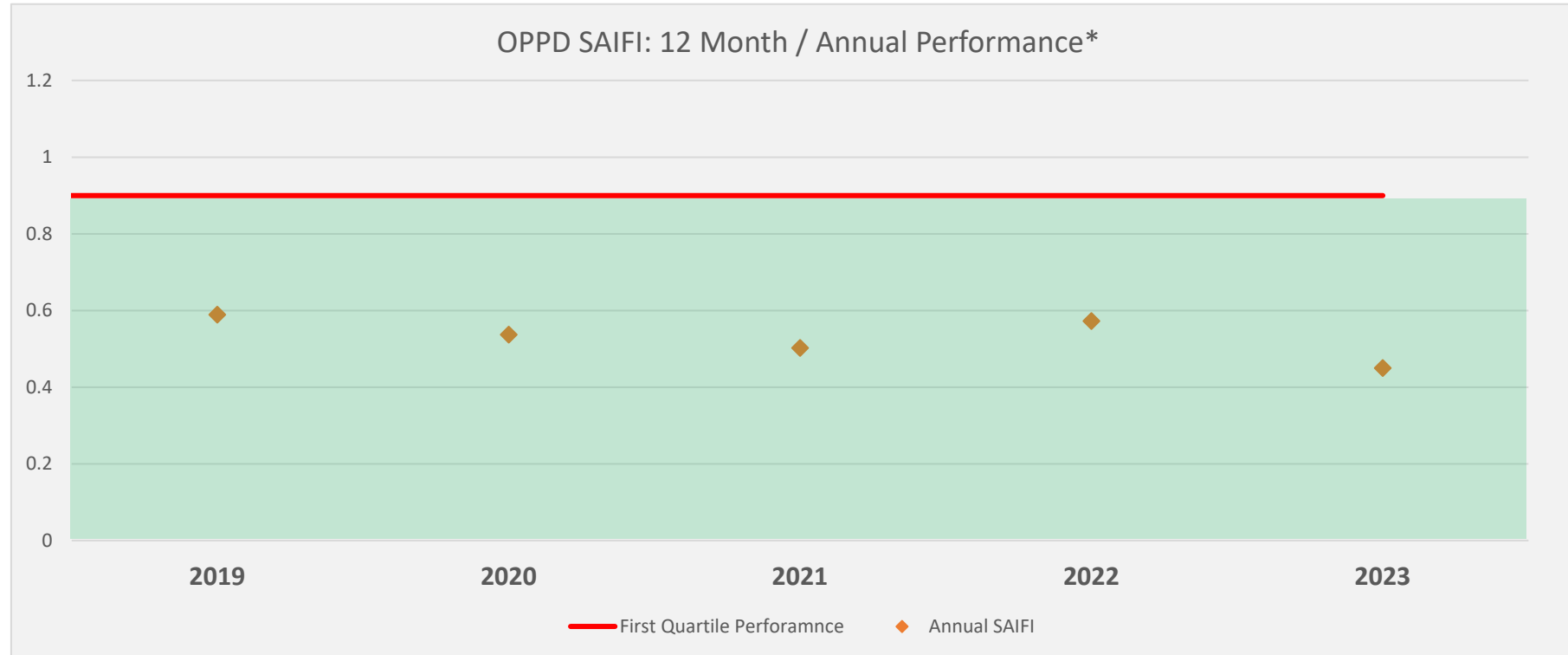
*Average outage length across the system per customer*



2023 SAIDI **58 Minutes**, 1<sup>st</sup> Quartile Performance

# System Average Interruption Frequency Index (SAIFI):

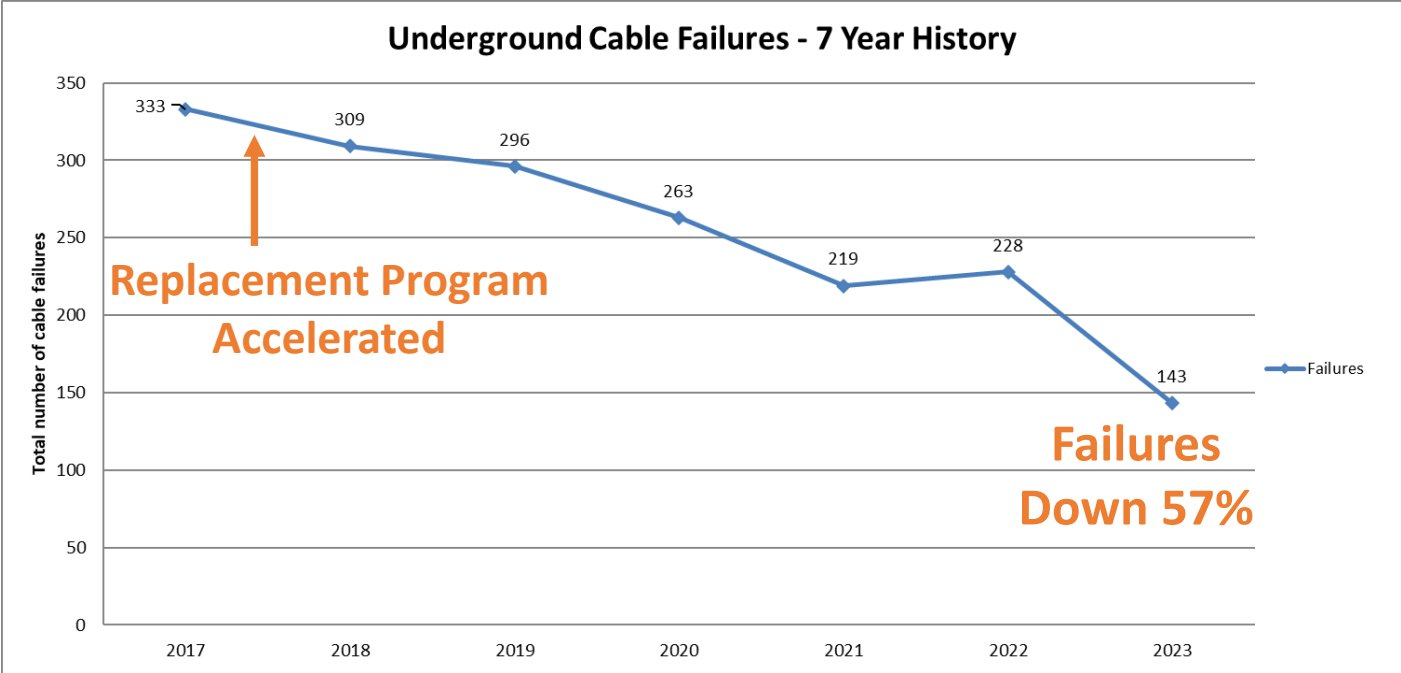
*Average frequency of outages across the system*



2022 SAIFI **0.45** incidents, 1<sup>st</sup> Quartile Performance

# Record: Underground Cable

Ongoing investment in underground cable program has yielded a definite return: 2023 had the lowest recorded cable failures on record



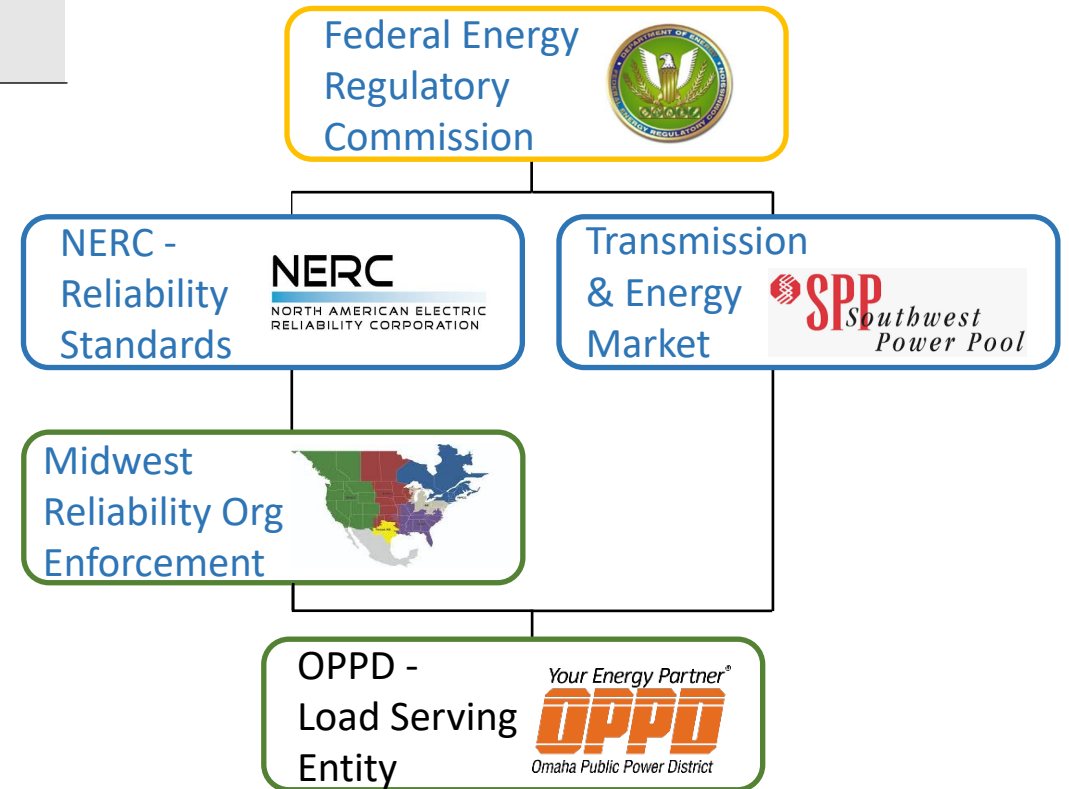
*Maintain a reliable  
transmission system  
in accordance with  
NERC standards*



# Transmission reliability

OPPD has met all regulatory requirements to ensure a reliable transmission system.

- ✓ MRO 2023 audits
  - Off-site (quarterly) → no enforceable violations
  - On-site (every 3-years, 2025) → no enforceable violations
- ✓ OPPD performs continuous monitoring
- ✓ No enforceable NERC violations since the last SD-4 update



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# Recommendation:

The System Management & Nuclear Oversight Committee has reviewed and accepted this Monitoring Report for SD-4 and **recommends that the Board finds OPPD is taking reasonable and appropriate measures to comply** with Board Policy SD-4.

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## SD-4 Performance

- ✓ Met customer energy requirements 100% of the time
- ✗ Improvement needed to reduce forced generation outages
- ✓ Minimized duration of outages for customers
- ✓ Minimized frequency of outages for customers
- ✓ Met applicable NERC reliability standards



**Any reflections on**

**what has been  
accomplished, challenges  
and/or strategic  
implications?**

