



Annual Asset Health Update (BP-SD-03)

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NPPD Board of Directors Meeting
Strategic Business Matters
December 2024

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RELIABILITY/RESILIENCY

Nebraska Public Power District's (NPPD) generation, transmission, and distribution systems must operate reliably to meet the energy needs of NPPD customers. NPPD shall maintain its generation, delivery assets, and technology solutions in good/safe/secure working condition, while making investments and upgrades as needed to maintain load serving capability and meet regulatory requirements.

NPPD must also provide for resilience within its electric supply system. Resilience means that the critical parts of the electric supply system can mitigate, survive, and/or recover from high impact events. Electric supply system resilience is interdependent with the functionally inseparable from electric supply system reliability.

The District standard shall be to:

- a. Meet all customer energy requirements through its generation assets and purchased power portfolio 100% of the time.
- b. Maintain generation unit availability at or above targeted benchmarks.
- c. Maintain an overall transmission network availability at or above targeted benchmarks.
- d. Maintain distribution system reliability at or above targeted benchmarks.
- e. Maintain technology solution availability at or above targeted benchmarks.

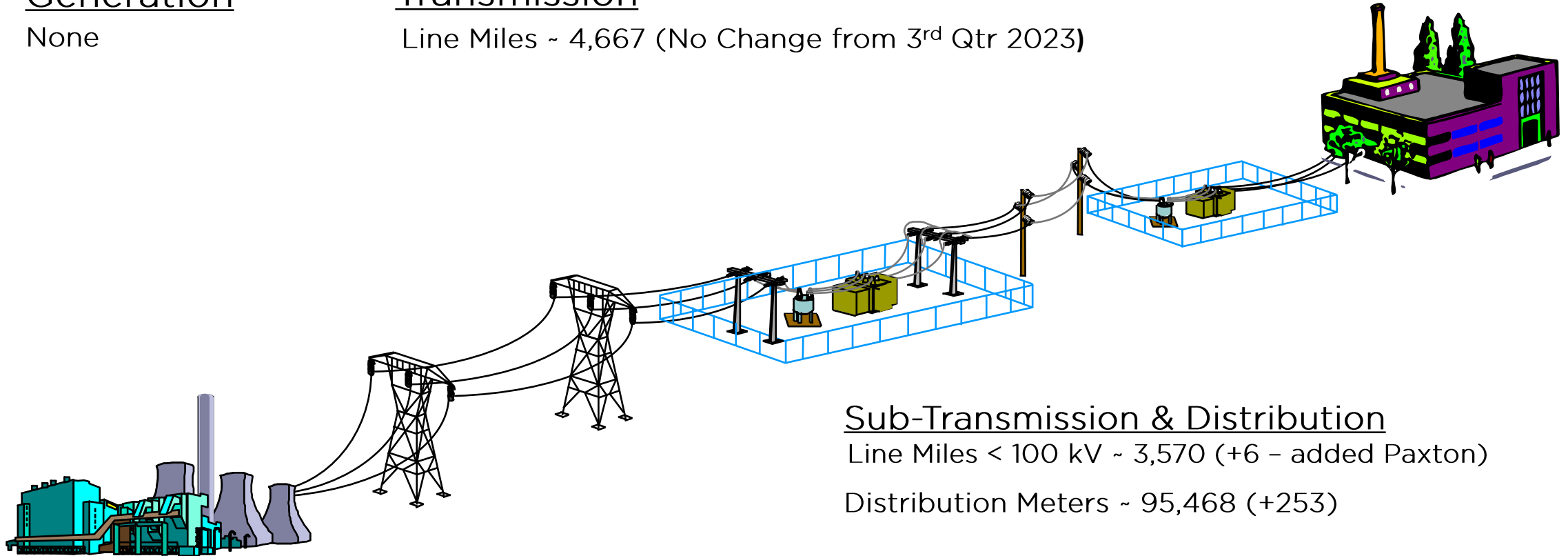
Changes to District Assets

Generation

None

Transmission

Line Miles ~ 4,667 (No Change from 3rd Qtr 2023)



Sub-Transmission & Distribution

Line Miles < 100 kV ~ 3,570 (+6 – added Paxton)












Distribution Meters ~ 95,468 (+253)

*We are monitoring and maintaining in excess of 250,000 components

Transmission and Distribution

Take a Closer Look – **STRATEGY MAP**  **KPIs**

 - Under Target
  - Caution
  - On Target

	Batteries - Transmission		Poles - Transmission
	Breakers - High Voltage		Relays - NERC
	Lines - Transmission		Relays - Non-NERC
	Poles - Distribution		Transmission RTUs
	Poles - Sub-Transmission*		Transformers - Sub-Transmission
			Transformers - Transmission

NERC = North American Electric Reliability Corporation
 RTU = Remote Terminal Unit

Transmission and Distribution Reliability Metrics

Take a Closer Look – **STRATEGY MAP**  **KPIs**

 - Under Target
  - Caution
  - On Target

BP-SD-03	SAIDI - System Average Interruption Duration Index
BP-SD-03	SAIFI - System Average Interruption Frequency Index
	CEMI - Customers Experiencing >3 Interruptions
BP-SD-03	TACOF - Transmission Average Circuit Outage Frequency
	TRIND - Transmission Index (Preventable)

Asset Health Focal Areas

- Poles (Distribution and Sub-Transmission Round Wood)
 - Distribution Poles reflect Caution, >2% reject (3.8%). Trending steady, will be replaced or reinforced by the end of 2025 for non-priority poles
 - Sub-Transmission Poles are good, but recent inspection results with UAS platforms and line patrols may cause a declining trend
- Breakers
 - Continue to assess aging assets and update plans for refurbishment or replacement
- Station Class Power Transformers – Sub-Transmission
 - Continue to assess aging assets and loading; update plans for refurbishment or replacement based upon condition and load growth
- Transmission Remote Terminal Units (RTUs)
 - Continue replacement of RTUs

Operations Support Team

- Fleet Services
- Aviation
- Facilities Services
- Inventory/Investment Recovery
- Drafting
- Business Continuity



Oct. KPI's	Idling	Utilization	Repair Expense
	true idle	miles/hrs	repair costs per mile
Light-Duty	<18%	>1,100	<\$.36
Medium-Duty	<28%	>635	<\$1.44
Heavy-Duty	<20%	>1,200	<\$1.01
Aerial	<15%	>675	<\$1.78
Crane/Digger	<15%	>300	<\$3.38

Operations Support Focus Areas

- Fleet Services
 - SAP and Process Automation (QRcode Endeavor)
- Aviation
 - Uncrewed Aerial Systems (Drones) and Artificial Intelligence
 - Sustainable Aviation Fuel (SAF)
- Facilities Services
 - Uninterrupted Power Supply (UPS at Doniphan), new building at Bassett, and York Operation Center gates and access update
- Inventory/Investment Recovery
 - Enhance SAP Material Requirements Planning (MRP) via FIORI
- Drafting
 - 3D Modeling
- Business Continuity
 - Grid Ex VIII, November 2025

Cooper Nuclear Station



	Reactor Vessel Internals		Switchyard
	Primary Containment		Transformers
	Condenser		Emergency Diesel Generator (EDG)
	Intake Structure		Batteries
	Turbines		Large Pumps
	Turbine Generator Control System	→	Large Electric Motors
→	Main Generator		High Pressure Cooling Injection (HPCI)
	Main Generator Exciter		Reactor Core Isolation Cooling
	Critical Fan Coil Units (FCU)		Neutron Monitoring System
	Feedwater Heaters		Radiation Monitoring System
	Heat Exchangers		Riverwell System
	Circuit Breakers		Service Water
	Optimum Water Chemistry System	→	Augmented Off Gas (AOG)

NEEDS ATTENTION

FAIR

GOOD

EXCELLENT

Production

Targeted Benchmarks - Nuclear

Take a Closer Look –
**STRATEGY
MAP**




KPIs

 - Under Target

 - Caution

 - On Target

	Unit Capability Factor – Cooper Nuclear Station		
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Cooper Nuclear Station Equipment Focus Area



- Main Generator
- Circulating Water Pump Motor
- Augmented Off Gas Reliability

Production


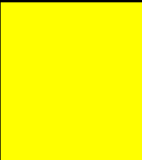

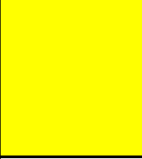
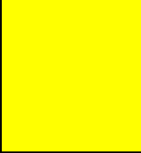
Generation:	Boiler Fuel	Cooling/ Circulating Water	Control System	Generator & Exciter	Transmission (Main Power Transformer)	Emergency Electrical	Feedwater	Station DC Voltage	Station Power Distribution	Steam Generating	Turbine
GGs 1	Yellow			Red						Yellow	Yellow
GGs 2	Yellow									Yellow	
SS 1	Yellow	Red					Yellow			Red	
SS 2	Yellow	Yellow					Yellow			Red	
BPS											
CPS										Yellow	

	Control System	Transmission	Communication	Blades	Drive Train	Generators	Towers	Voltage Control	Condition Monitoring	Rotor Positioning
AWEF				Yellow	Red					
				Needs Attention		Fair	Good	Excellent		

Production Targeted Benchmarks

Take a Closer Look – **STRATEGY MAP**  **KPIs**

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	Equipment Availability Factor – GGS Unit 1		Equipment Availability Factor – SS Unit 2
	Equipment Availability Factor – GGS Unit 2		Equipment Availability Factor – BPS
	Equipment Availability Factor – SS Unit 1		

Production Program Focus Areas

- Reliability and Market Performance
 - Selective capital and O&M work to maintain reliability
 - Units available when called upon by the market
- Compliance
 - Environmental regulations
- Staffing and Knowledge Retention
 - Critical skills on shift

Enterprise Technology

↑	Cyber Security
↑	Physical Security
→	Compliance
→	Internet Connectivity*
↑	Business Network Connectivity

→	Business Server Infrastructure
↑	Organizational Data
→	Backup/Recovery System*
↑	Critical Business Systems*

	Excellent
	Good
	Fair
	Needs Attention

↑	Improving
→	Steady
↓	Degrading

*SD03 Targeted Benchmark

Enterprise Technology Focus Areas

- Risk-Based Decision Making
 - SAP Migration to New Version/Environment
 - Network and System Resiliency
 - Data Protection
 - Prioritization of baseload work and projects
- Continuous Compliance Maturity
 - Adapt to changing regulations and technology
 - Continue to leverage NPPD's strong culture of compliance
- Dedication to Excellence
 - Proactive Training and Drills
 - Collaborative Response
 - Continuous Improvement through Lessons Learned



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Questions

Stay connected with us.



Nebraska Public Power District
Always there when you need us