

2024 10-Year Assessment Preliminary Solutions

Stakeholder and Customer Webcast

PRESENTED BY:

System Planning

May 13, 2024

- ATC Proprietary -

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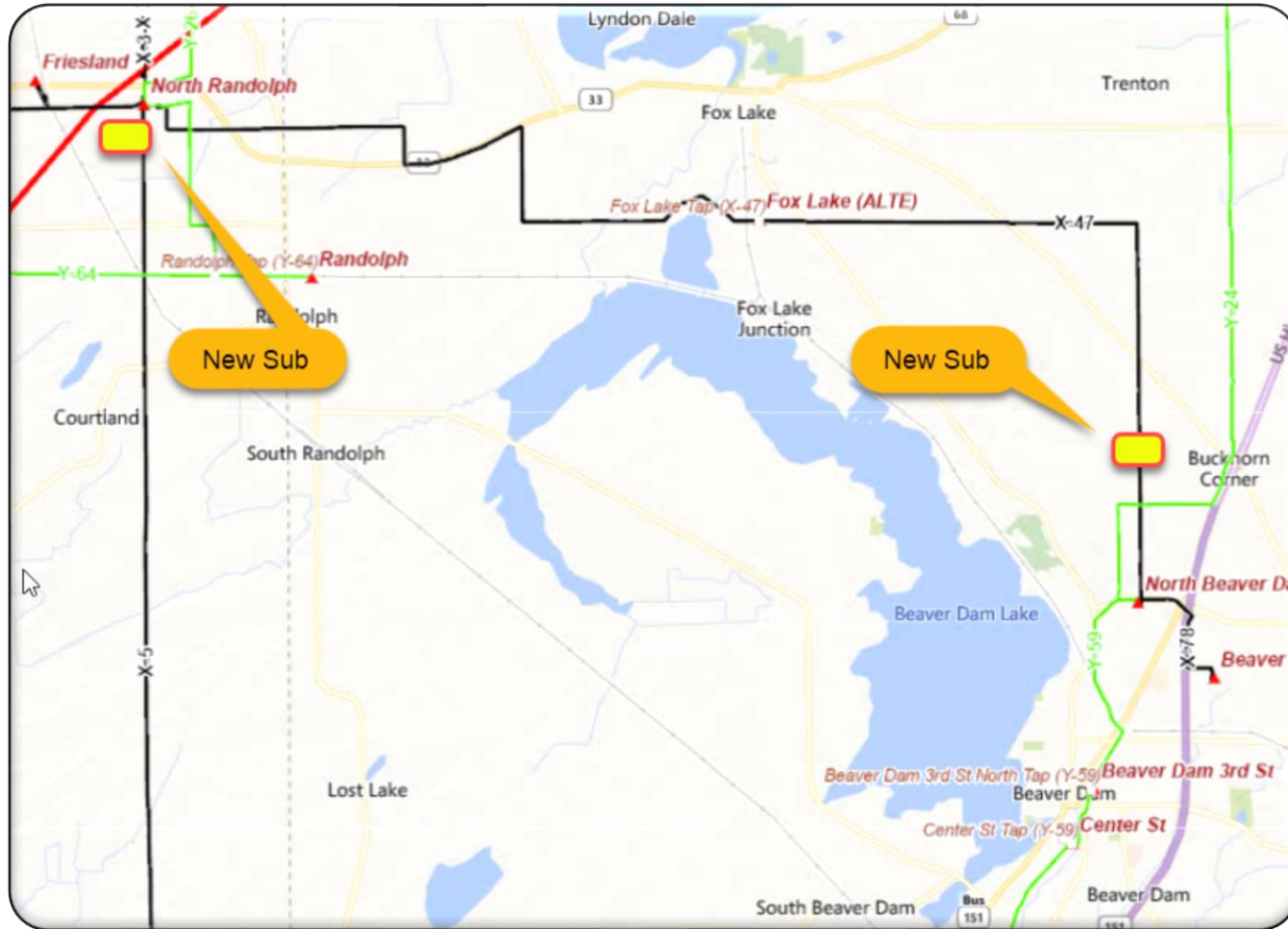
Purpose

- Define and Solicit Input on Preliminary Solutions
 - Network/System Planning
 - Generation to Transmission (G-T)
 - Distribution to Transmission (D-T)
 - Asset Renewal
- Solicit Input on Public Policy Driven Needs
- Summarize Next Steps

Preliminary Solutions

- New projects and asset renewals are offering solutions to issues in the ATC footprint.
 - Dodge County DIC
 - Grant County DIC
 - Sun Prairie Area Reliability Project
 - Racine County DIC – Nimbus Substation

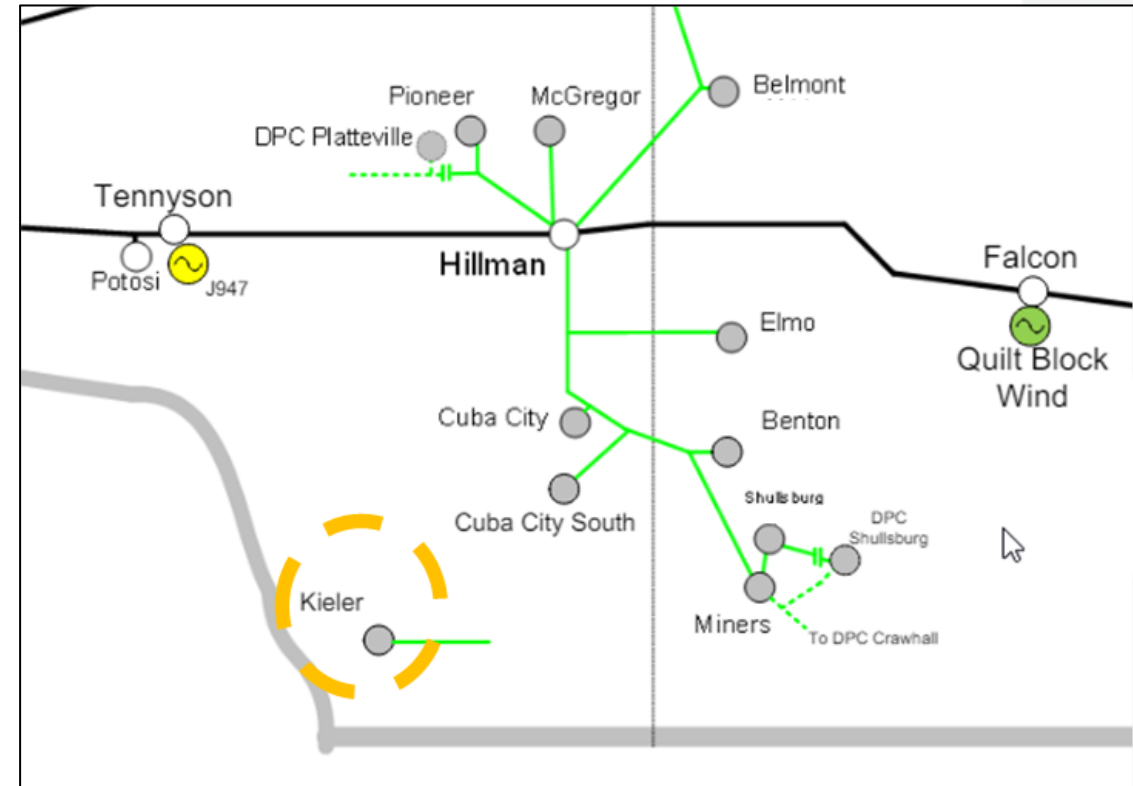
Dodge County DIC



- New load interconnect request in Beaver Dam area.
 - Targeting MTEP24 Appendix A, #50138
 - ISD targeting Q2 2027
 - Cost Estimate: \$161M
- Project scope includes:
 - New Rocket 138 kV substation near existing North Randolph substation
 - New Manhattan 138 kV interconnection substation on customer property
 - New Rocket – Manhattan 138 kV double circuit line
 - Rebuild existing North Randolph – N Beaver Dam 138 kV line between Rocket and Manhattan subs to higher capacity.

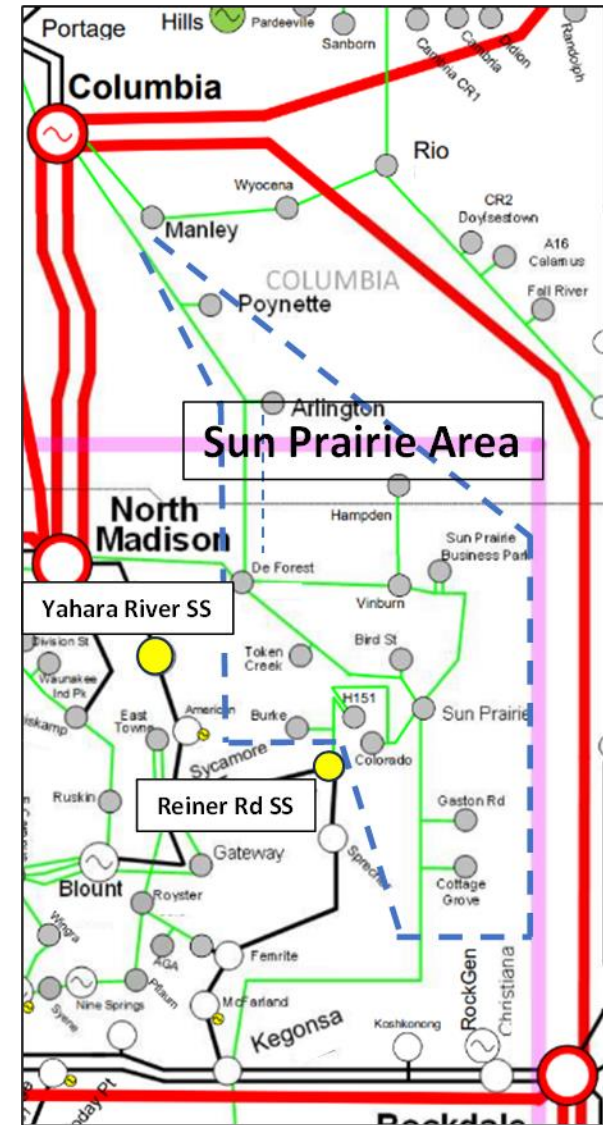
Grant County, DIC, New Substation

- New load interconnection request in SW Wisconsin.
- Project scope includes:
 - Construct a new 69-kV transmission line to network Hillman – Miners (Y-130) 69-kV line
 - Construct a new 69-kV substation near the customer site.
- Targeting MTEP24 Appendix A, #24778
- ISD targeting Q2 2027
- Cost Estimate: \$50.1M



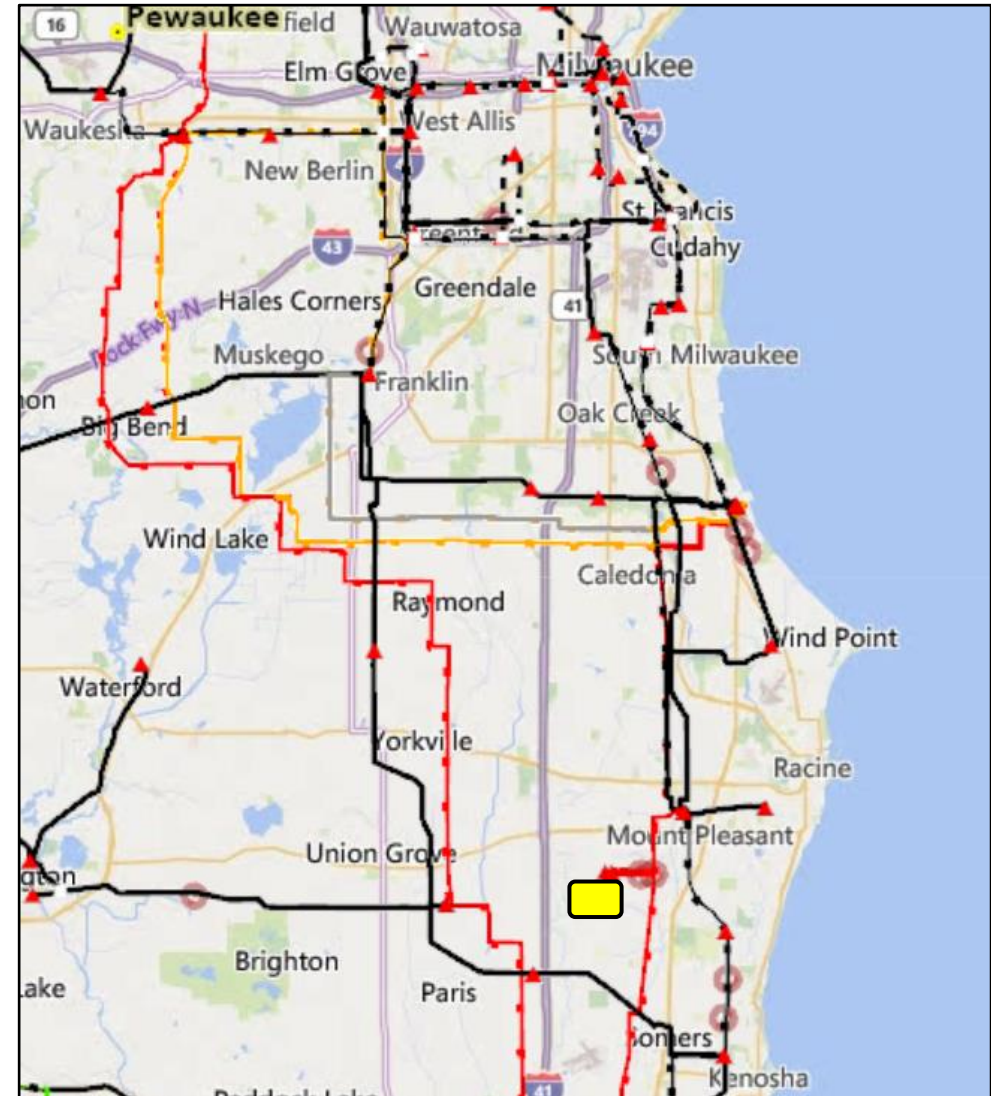
Sun Prairie Area Reliability Project

- Project to address thermal limitations under multiple contingencies in the Sun Prairie Area.
- Project scope includes:
 - Loop through Sun Prairie – Kegonsa (Y-81) 69-kV line in Reiner Road SS
 - Loop through DeForest - Sun Prairie (Y-137) 69-kV line in Yahara River SS
 - New 138/69-kV transformers at Yahara River and Reiner Road SS
- MTEP24 Appendix B, #25161
- ISD targeting Q3 2029
- Cost Estimate: \$61.5M



Racine County DIC, Nimbus Substation

- New load interconnection request in the SE Wisconsin
 - Targeting MTEP24 Appendix A, #25299
 - ISD targeting Q2 2025
 - Cost Estimate: \$89M
- Project scope
 - New 138/24.9 kV Nimbus substation
 - Two new Mt Pleasant – Nimbus double circuit lines
 - Expansion of Mt Pleasant 138 kV substation
- Project scope for buildout of EITM zone under development



Asset Renewal Program

PRESENTED BY:

Justin Nettesheim

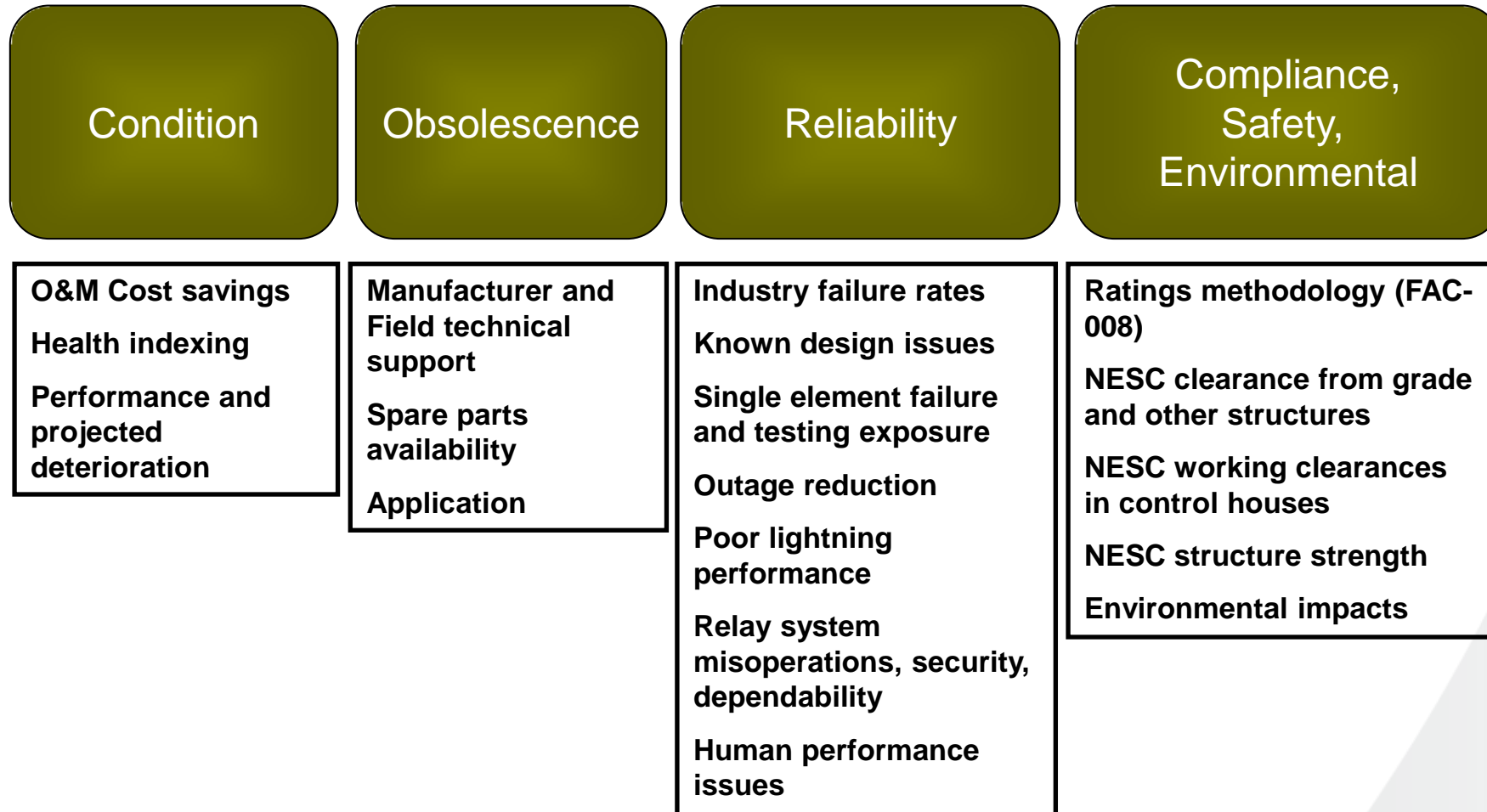
“ATC’s Asset Renewal strategy is about balancing Asset Risk and Costs”



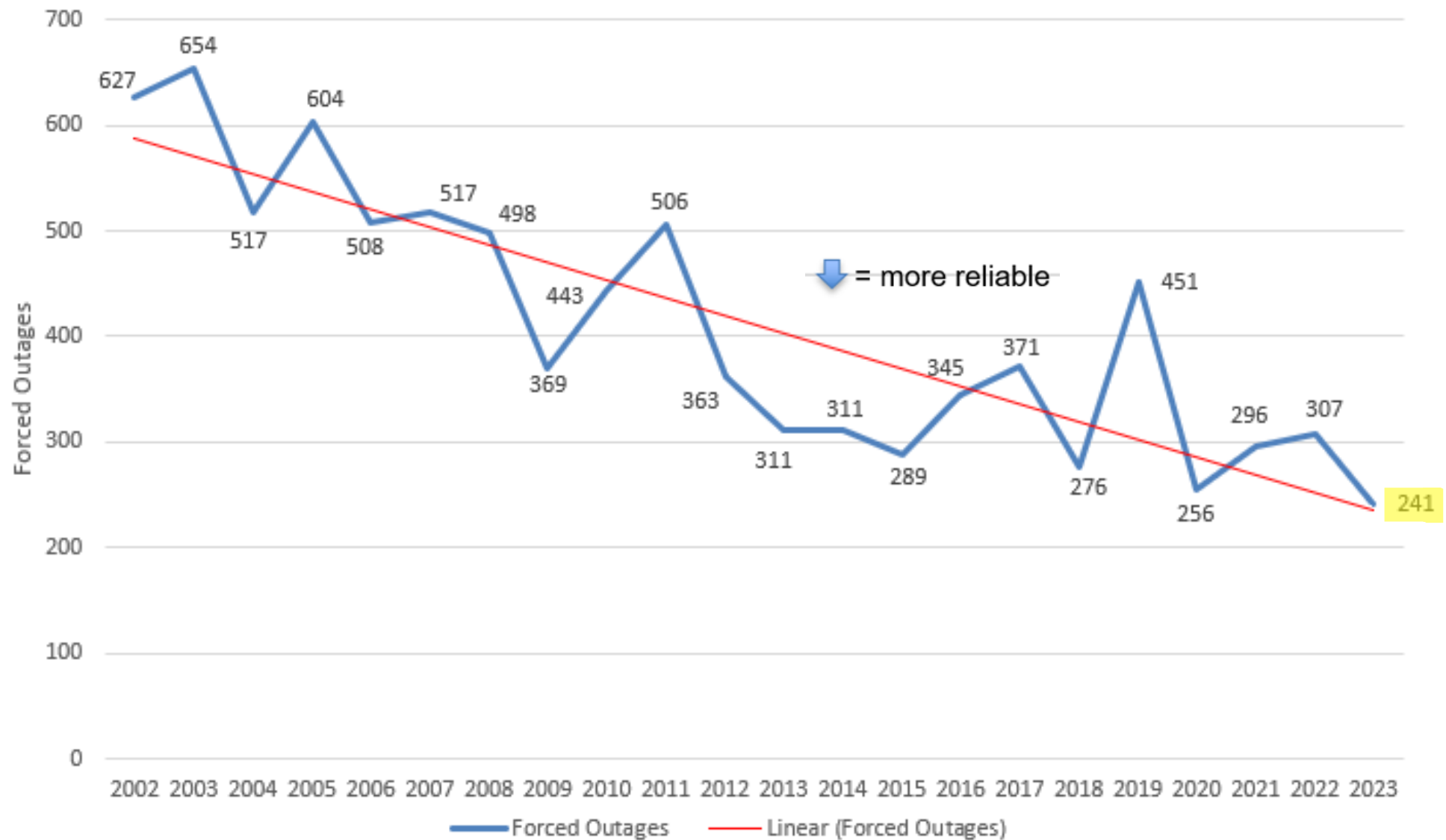
Asset Renewal Program Objectives

- Safety – public and worker
- Minimize total life cycle cost [Net Present Value of Revenue Requirements (NPV RR) from customer cost/rate perspective]
- Compliance
- Manage risk
- Reliable performance – maintain or improvement
- Environmental performance improvements
- Coordination with Stakeholders

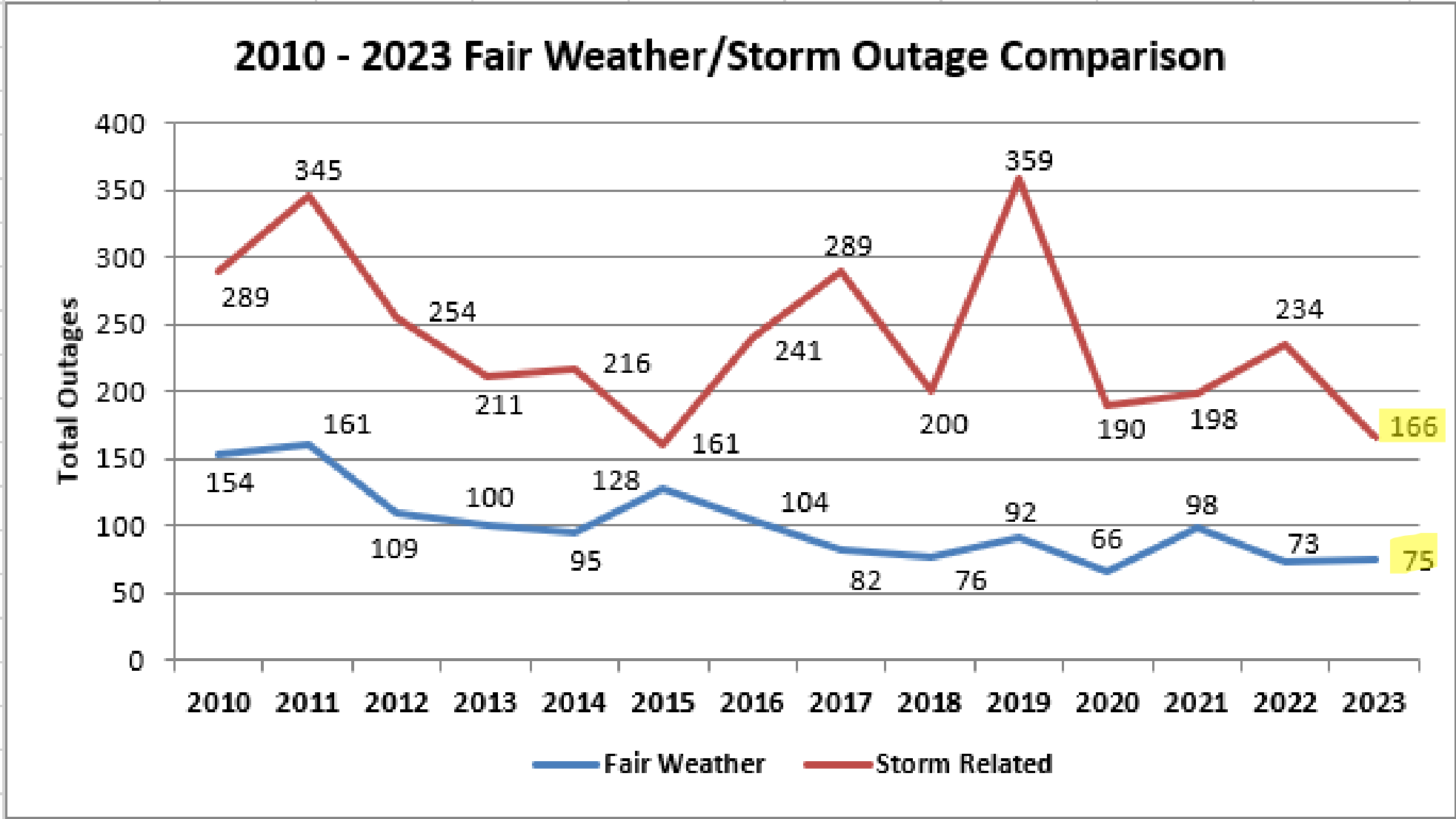
Asset Renewal Program Replacement is based on.... (Hint: Not Age!)



2002- 2023 Forced Outages



2010 - 2023 Fair Weather/Storm Outage Comparison



Asset Renewal Program Forecast

Escalated Cost

| Equipment Classification / Replacement Year | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | Total |
|---------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| ⊕ IT/OT/Fiber | \$5.1M | \$2.3M | \$9.5M | \$9.7M | \$41.2M | \$10.2M | \$10.5M | \$88.6M |
| ⊕ Substation | \$130.7M | \$151.5M | \$95.3M | \$87.3M | \$107.0M | \$92.0M | \$90.7M | \$754.6M |
| ⊖ Transmission Line | \$268.0M | \$220.5M | \$377.1M | \$271.2M | \$282.5M | \$283.4M | \$294.5M | \$1,997.1M |
| ⊕ Tline - OH | \$249.1M | \$218.5M | \$270.7M | \$245.4M | \$257.5M | \$257.8M | \$268.3M | \$1,767.3M |
| ⊕ Tline - UG | \$18.9M | \$2.0M | \$106.4M | \$25.8M | \$25.0M | \$25.6M | \$26.2M | \$229.9M |
| Total | \$403.8M | \$374.3M | \$481.8M | \$368.2M | \$430.7M | \$385.7M | \$395.7M | \$2,840.4M |

Listing of Asset Renewal Project Solutions

Related Resources

- See ATC 10 Year Assessment Site under
 - [Projects - Network Projects List - Related Resources](#)
 - Condition and Performance: Later ISDs, Explanation “Project Added”

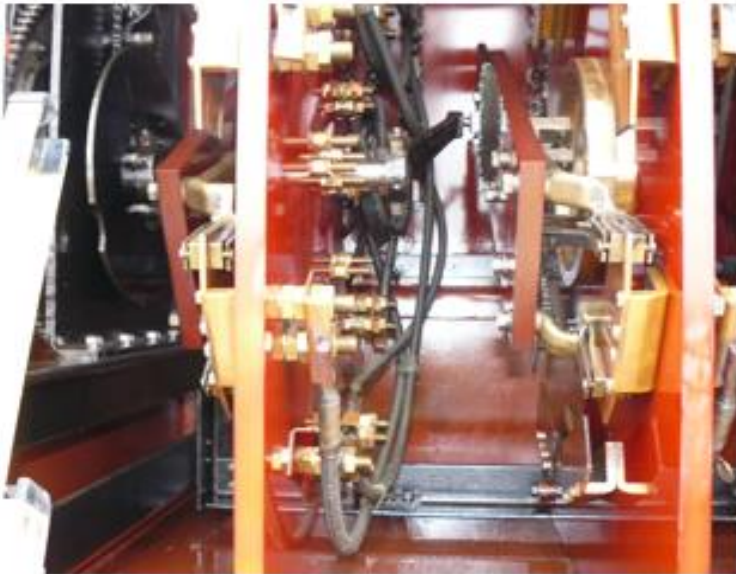
[2023 TYA Project List](#)

[Q1 2024 Update to 2023 TYA Project List as of April 15, 2024](#)

| Project Name | 2024 Est. ISD Month - Year | ZONE | Need Category | Planned / Proposed / Provisional | MISO MTEP Appendix (BOLD = Certified) | MTEP PRJID | Cost | Explanation |
|------------------------------------------------------------------------------------------|----------------------------|------|--------------------------------------|----------------------------------|---------------------------------------|------------|---------------|-----------------------------------------------|
| Walnut – Blount 69 kV, Construct New Line | Dec-31 | 3 | Reliability | Provisional | B in MTEP21 | 1730 | \$ 28,793,800 | Updated Cost |
| North Monroe – Verona 69 kV (Y-42/Y-208), Rebuild & OPGW | Jul-27 | 3 | Condition and Performance | Provisional | B in MTEP24 | 25001 | \$ 49,000,000 | No Update |
| North Lake Geneva – Walworth 69 kV (Y-41), Partial Rebuild & OPGW | Aug-28 | 3 | Condition and Performance | Provisional | B in MTEP24 | 25002 | \$ 22,100,000 | Updated Project Cost |
| South Lake Geneva – North Lake Geneva 69 kV (Y-152), Partial Rebuild & OPGW | Aug-27 | 3 | Condition and Performance | Provisional | B in MTEP24 | 25004 | \$ 11,000,000 | No Update |
| Gran Grae – Hillside 69 kV (Y-161), Rebuild & OPGW | Jul-27 | 3 | Condition and Performance | Provisional | B in MTEP24 | 25019 | \$ 12,000,000 | No Update |
| Rock River SS, Bus Rebuild | Apr-25 | 3 | Condition and Performance | Planned | A in MTEP23 | 20201 | \$ 847,000 | No Update |
| J1214 J1326 J1377 J1410 J1411 MPFCA Network Upgrades | May-25 | 3 | G-T Interconnection | Planned | A in MTEP23 | 24841 | \$ 1,279,961 | No Update |
| J1304 J1305 J1460 MPFCA Network Upgrades | Dec-25 | 3 | G-T Interconnection | Planned | A in MTEP23 | 24782 | \$ 4,930,697 | No Update |
| South Beaver Dam – North Beaver Dam 69 kV (Y-59), Uprate | Apr-24 | 3 | Reliability | Planned | A in MTEP20 | 14909 | \$ 216,470 | Updated ISD |
| Sun Prairie Area Reliability Project | Dec-28 | 3 | Reliability | Provisional | B in MTEP24 | 25161 | \$ 50,000,000 | Updated Cost |
| Highland – Hill Valley 138 kV, Construct New Line | Dec-29 | 3 | Reliability | Provisional | B in MTEP24 | 25203 | \$ 9,500,000 | Updated ISD |
| Cuba City South, DIC, Sub Expansion | Dec-27 | 3 | T-D Interconnection | Proposed | A in MTEP24 | 25220 | \$ 11,000,000 | No Update |
| Union Townline, DIC, Sub Expansion | Jun-26 | 3 | T-D Interconnection | Proposed | A in MTEP24 | 25226 | \$ 6,700,000 | No Update |
| East Madison Area Reliability Project | Dec-28 | 3 | Reliability | Provisional | B in MTEP24 | 25087 | \$ 14,000,000 | Updated Project Name, Need Category, and ISD. |
| Madison Area Reactive Project | Dec-28 | 3 | Reliability | Provisional | B in MTEP24 | 25103 | \$ 6,500,000 | Updated ISD |
| Mukwonago – University 138 kV (UNIG52), Rebuild | Dec-31 | 3, 5 | Condition and Performance | Provisional | B in MTEP24 | 50010 | \$ 55,000,000 | No Update |
| West Middleton – Str 36 69 kV (6967/6963), Rebuild Green Poles (CAC/CCA/SX) Replacements | Oct-26 | 3 | Condition and Performance | Provisional | B in MTEP24 | 50017 | \$ 7,200,000 | No Update |
| Lake Geneva SS, DIC, New Substation | Feb-27 | 3 | T-D Interconnection | Planned | A in MTEP20 | 14907 | \$ 2,471,000 | Updated ISD |
| Oak Ridge, DIC, Additional Transformer and Bus Tie | Dec-25 | 3 | T-D Interconnection | Planned | A in MTEP23 | 20204 | \$ 1,268,000 | No Update |
| Black Earth, DIC, Additional Transformer | Jun-25 | 3 | T-D Interconnection | Proposed | A in MTEP24 | 22911 | \$ 1,909,000 | No Update |
| Birchwood SS Relay and Capacitor Bank Asset Renewal | Dec-27 | 3 | Condition and Performance | Proposed | A in MTEP24 | 22798 | \$ 1,200,000 | No Update |
| University – Whitewater 138 kV (UNIG51), Partial Reconnector & OPGW | Dec-25 | 3 | Reliability, Operational Flexibility | Proposed | A in MTEP24 | 50102 | \$ 4,825,000 | Project Added |
| J1773 Edmund Swt St Network Upgrades and Interconnection Facilities | Mar-30 | 3 | G-T Interconnection | Proposed | A in MTEP24 | 50111 | \$ 19,693,000 | Project Added |
| J1781 Hill Valley SS Network Upgrades and Interconnection Facilities | Mar-30 | 3 | G-T Interconnection | Planned | A in MTEP24 | 50112 | \$ 7,219,000 | Project Added |
| Columbia SS Power Transformer Asset Renewal | Dec-28 | 3 | Condition and Performance | Provisional | B in MTEP25 | 50122 | \$ 16,461,000 | Project Added |
| Portage SS Relay and Breaker Asset Renewal | Dec-28 | 3 | Condition and Performance | Provisional | B in MTEP25 | 50124 | \$ 7,100,000 | Project Added |
| Rock River SS and Remote Ends Asset Renewal | Dec-28 | 3 | Condition and Performance | Provisional | B in MTEP25 | 50125 | \$ 8,842,000 | Project Added |
| Eden SS Relay and House Asset Renewal | Dec-28 | 3 | Condition and Performance | Provisional | B in MTEP25 | 50128 | \$ 4,945,000 | Project Added |
| Dam Heights – Baraboo 69 kV (Y-75), Partial Rebuild | Dec-28 | 3 | Condition and Performance | Provisional | B in MTEP25 | 50131 | \$ 13,000,000 | Project Added |
| Zenda Tap – Katzenberg 69 kV (Y-51 ALE), Partial Rebuild Green Poles | Dec-28 | 3 | Condition and Performance | Provisional | B in MTEP25 | 50133 | \$ 13,000,000 | Project Added |
| Huskamp – Division Street Tap 69 kV (Y-132), Rebuild | Dec-28 | 3 | Condition and Performance | Provisional | B in MTEP25 | 50134 | \$ 5,300,000 | Project Added |

Lancaster Power Transformer – Life Extension

- Allis Chalmers Power Transformer
- Built in Milwaukee in 1954
- Life Extension – 2015
 - High Voltage Bushings
 - Low Tap Changer bypass
 - Oil Seal Gaskets
- Planned Retirement 2025



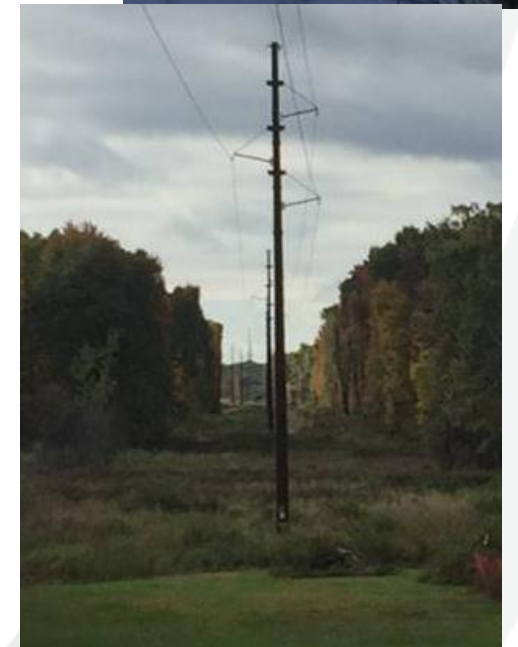
Femrite Transformer – Life Extension Project

- Femrite Transformer
 - 1989 vintage Westinghouse 187MVA with model UVT load tap changer (LTC)
 - Transformers and LTCs are generally expected to be in service for 60 years
- Existing UVT model issues:
 - Parts and service are no longer available
 - service issues with the control and LTC protection
- Solution: Replace UVT model with new LTC
 - Quick payback period, minimal project risk
 - Work scheduled for summer 2024
 - Transformer is expected to be in service for an additional 20+ years



Asset Renewal T-line Needs Example

- Portage – Dam Heights 69kV Rebuild (Line Y-16)
 - Project Background
 - ◆ Approximately 25 of miles of rebuild
 - Past Needs
 - ◆ Condition and Performance Issues
 - ◆ Replace 1910's vintage lattice structures
 - ◆ Outages: One of the most frequently outage ATC lines
 - ✓ On average about 4 outages per year
 - ✓ Need to update to avian friendly design
 - ✓ Improved lightning performance
 - Current status
 - ◆ Project went in-service Fall of 2017
 - ◆ One lightning outage since the new design went into service (Design 45kA strike, actual 192kA strike)



Ten Year Assessment Status

- Next Steps
 - Solutions comments – due June 1
 - Start drafting TYA online report – May
 - Finish sensitivity studies – May
 - Develop new or revised scope and cost estimates – June
 - ATC internal review/approval – August
 - 2024 Assessment publication – November 4

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Q&A

