

Winter Generator Site Preparedness Visits

John Wolff
Senior Lead Engineer, Generation

Mike Hughes
Manager, Entity Engagement, RF

Operating Committee
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Disclaimer: While materials are current at the time of publishing, applicable requirements may change. PJM Governing Documents control.

Site Visits are NOT Part of any Compliance Monitoring or Enforcement

- History of Program
- SERC Engagement
- Selection Criteria
- Site Visit Overview
- Best Practices
- Statistics
- Program Summary

Initiated by Reliability First during Winter 2014-2015; PJM collaboration began during Winter 2023-2024

- Prior to PJM collaboration, site visits were typically less than 10 per season
- 2023-2024 – 16 Visits; 3 with PJM
- 2024-2025 – 20 Visits; 14 with PJM
- 2025-2026 – 28 Visits; 24 with PJM
- 2026-2027 – Target of 30 sites. Also initiating a program with SERC

SERC accompanied the RF/PJM Team on one site visit in 2025-2026 and is in process of establishing a site visit program for GO's in their footprint.

- Site Visit Program is being initiated through SERC's Generator Working Group
- Site Visit Procedure is being Finalized
- Anticipate 3 Site Visits in the Inaugural Year



The winter site visit program is completely voluntary. Generator Owners can elect to not host the site visit. Conversely, GO's can also volunteer to be visited. The visits are NOT part of compliance or enforcement. Below are examples of criteria which may be used to select sites for visits.

- NERC GADS Data
- PJM eDART Data
- New Units or Units with Recent Ownership Changes
- Units Deemed Critical by ISO/RTO
- Black Start Units
- Mix of Gen Types include Fossil Boilers, CT's/CC's, Hydo, Wind and Solar

The site visit process is almost a year long process

- Selection Process begins in June/July
- Regional Entity contacts the proposed sites to confirm participation in the visit; once confirmed, RE sends the GO a Plant Winterization Plan Survey to collect additional information and documentation from the site
- Visits are coordinated to group several sites within a close geographical proximity so that a team can visit multiple sites within a week's time
- Teams are assembled – typically two to four RF/PJM personnel
- The Team Lead will coordinate specifics of visit, including site logistics, PPE requirements, agenda, pre-visit coordination and detailed document review with the team members, etc.

The onsite visit typically takes about 6 hours

- Introductions and Roles of all Participants
- RE Purpose and Scope of Visit
- PJM Introduction and Overview Presentation
- Generator Owner Overview of Plant/Facility
- Winterization Topics Discussion
- Lunch Break
- Tour of Facility
- Wrap up Meeting including Best Practices, Recommendations, Action Items and Next Steps in Process

- Final Report Preparation – includes overview, review of preparedness, photos of relevant items, identified best practices and recommendations
 - Draft report shared with GO for review and approval prior to finalization
 - Final report distributed to GO – confidential and non public
- Season wrap up meeting between RF and PJM
 - Discuss opportunities for improvement for next season
 - Consolidate list of best practices & general recommendations
- Internal Presentations

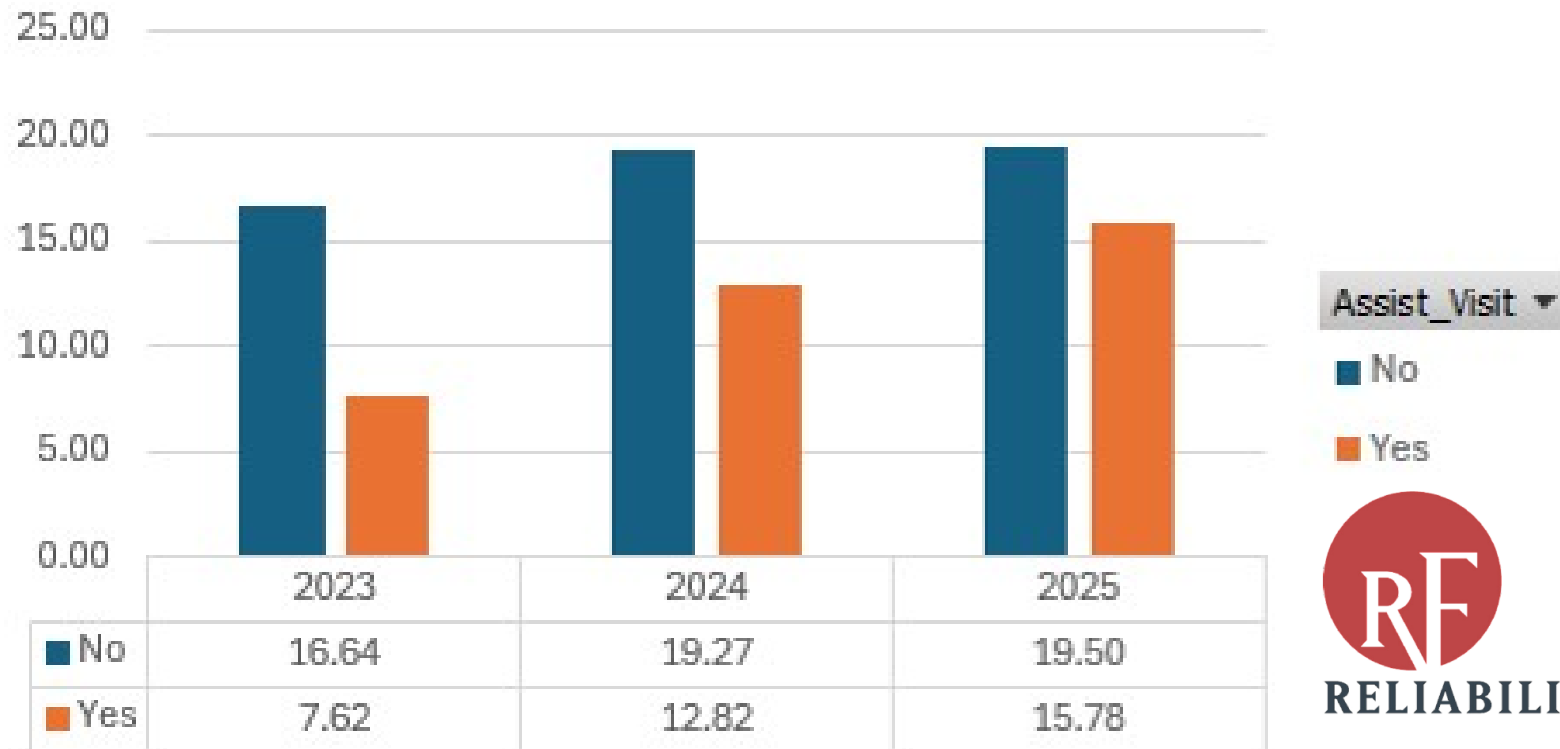
- Internal and External Communications
- Increased Rounds and Additional Personnel
- Heat Tracing (Documentation, Testing, Monitoring, Alarming)
- Insulation (Inspection, Repairs)
- Windbreaks & Enclosures (Permanent, Temporary)
- Instrument Boxes
- Local and Centralized Temperature Indications
- Pre-Staged Supplies in Strategic Locations Throughout the Facility
- Dual Fuel Testing
- Heat Trace and Freeze Protection Powered by UPS or Back up Power Source

Between the winter months of 2023 and 2025 (e.g., November through March), statistical analysis of two populations representing (1) a group of registered entity Generator Owners (GOs) that participated in the ReliabilityFirst Cold Weather assist visit outreach program against (2) a wider population of all registered GOs within the RF region experience statistically significant improvement within three performance categories of Equivalent Forced Outage Rate (EFOR), Weighted Equivalent Forced Outage Rate (WEFOR), and Unavailability Factor (UF).

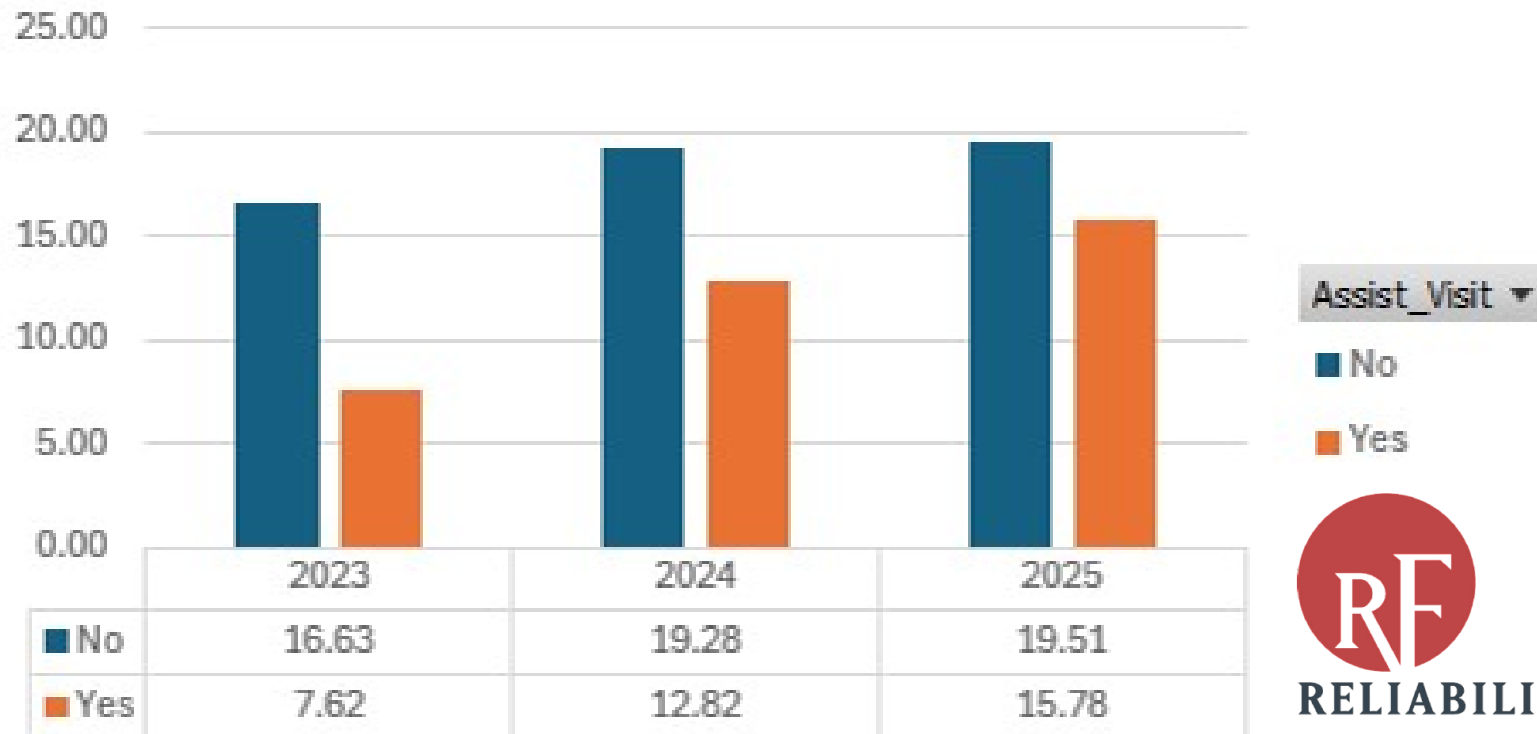
EFOR measures the probability that a generating unit will be unavailable due to a forced outage or derating. WEFOR measures the probability that a group of units will not meet their generating requirements because of forced outages or forced derates. The weighting gives larger units more impact to the metric than smaller units. And, finally, UF represents the percentage of time a generating unit is forced offline or derated from cold weather influences. The Electric Reliability Organization (ERO) desires lower average numbers for all three metrics to maximize plant utilization, efficiency, and uptime. In other words, lower average numbers on these values produce better performance results for the ERO.

This encouraging result suggests that the RF AV program's promotion and sharing of cold weather winterization best practices across the region helps keep cold weather GO performance at the forefront of operations and may help maximize GO outcomes during winter months. RF Entity Engagement expresses its gratitude and appreciation to its CWW AV partners, especially the PJM and MISO CWW teams and other Electric Reliability Organization (ERO) regional representatives for their considerable, significant, and meaningful support, coordination, and personal investment in this outreach.

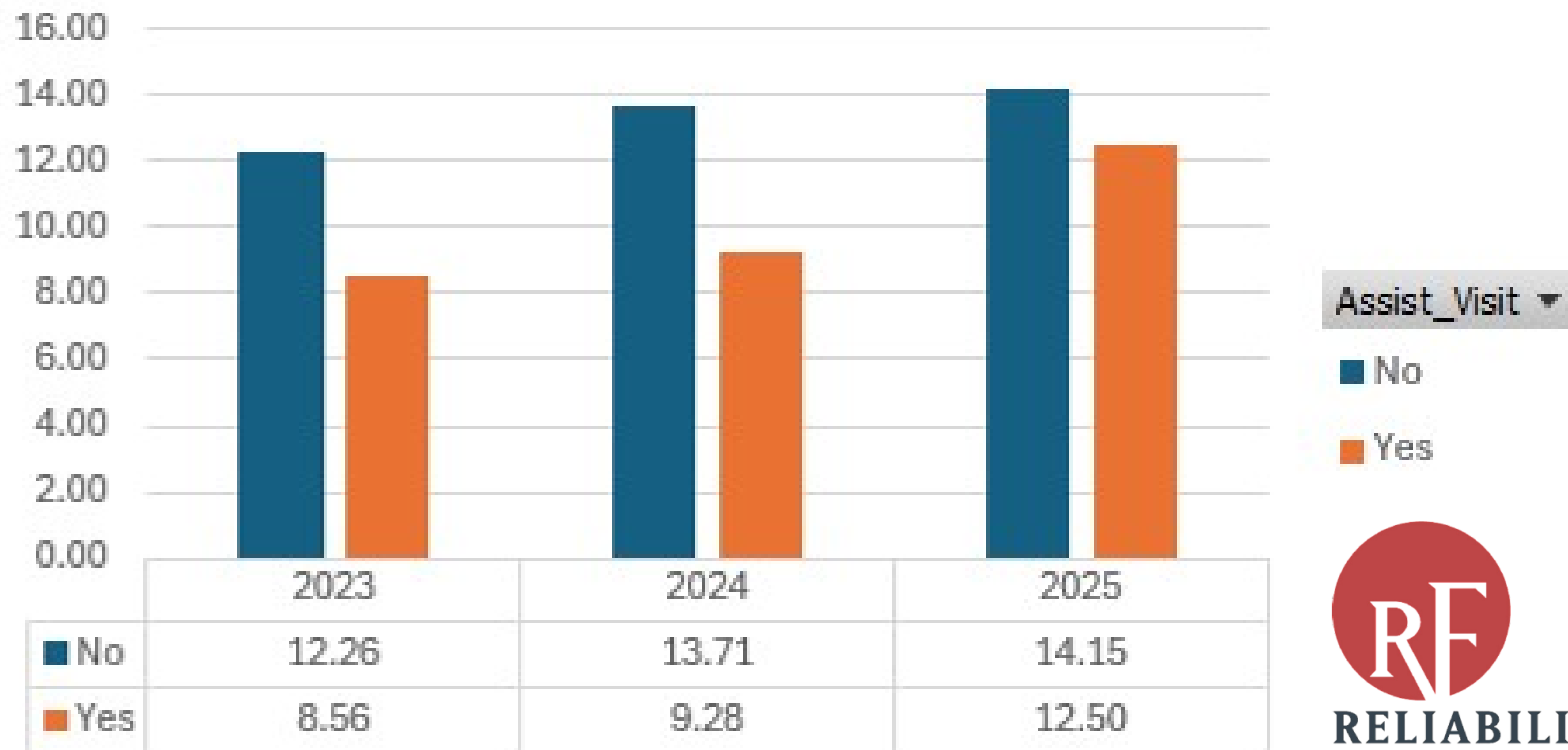
Average EFOR by Year Entity Outreach Comparison



Average WEFOR by Year Entity Outreach Comparison



Average Unavailability Factor by Year Entity Outreach Comparison



The Site Visit Program provides both tangible and intangible benefits.

- Key Performance Metrics are improved for plants that have had a visit
- The visits provide an opportunity for the GO's, PJM and RF to meet in person and establish a working rapport
- The opening presentations provide information to GO's that they may otherwise not know or have access to
 - One GO requested a more detailed information to be delivered at a fleet-wide plant managers conference
- Fosters collaboration and information sharing among all participants

Presenter/SME
John Wolff,
John.Wolff@pjm.com

Mike Hughes,
Mike.Hughes@rfirst.com



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

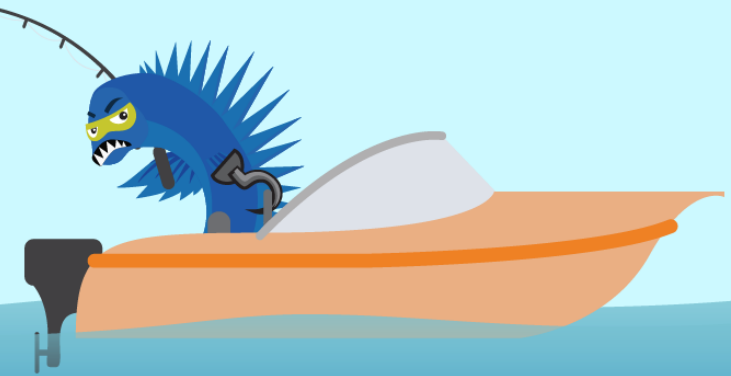
- [PJM Manual 14D - Attachment N](#)
- [Cold Weather Winterization Program After Action Report 2024-2025 – ReliabilityFirst](#)
- [NERC Generating Unit Winter Weather Readiness Guideline, Revision 4](#)

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