

NAGF Human Performance Initiatives

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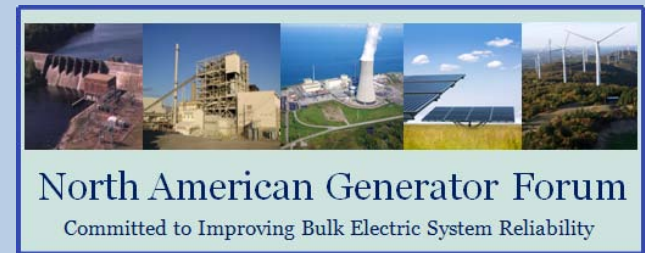
NextEra Energy Resources

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Improving Human Performance on the Grid

Atlanta, Ga. March 27-28, 2013

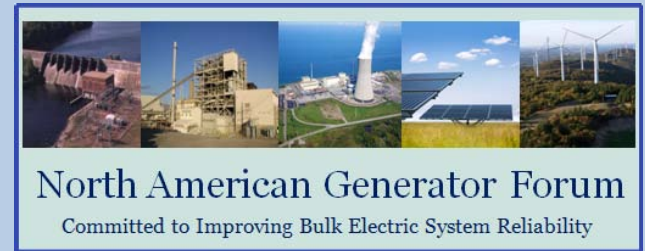
NAGF



•What we are

- Currently a volunteer based forum
- Moving to a non-profit dues based organization
- Have Working Groups
 - Standards Review Team (Lead: Patrick Brown, Essential Power, LLC)
 - Nuclear Peer Group (Lead: Alison MacKeller, Exelon)
 - Security Practices/CIP (Lead: Josh Sandler, Duke-Energy)
 - Operational Excellence (Lead: Al Schriver, NextEra)
 - Renewables/Generator-TOP (Leads: Dominic Serpe, E.ON)
 - ICP/Compliance Culture (Lead: Dana Showalter, E.ON)

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•Issues

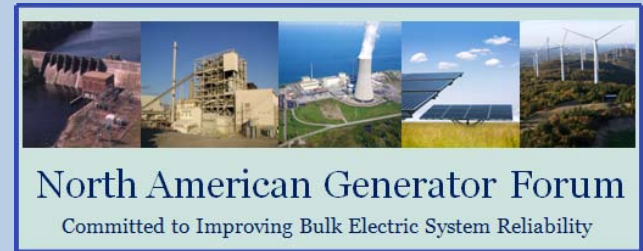
➤ Workforce Demographics

- Turnover due to aging workforce
- Operators now hiring into plant without years of plant experience
- Lack of practical experience

➤ Power Plant Technology

- Increasingly complex technology
- Time pressures
- Info Glut

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- **Human Error and Situational Awareness**

- NERC Lessons Learned from Generator Perspective

- Human Performance Bulletins

- Generator Operator Training



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Operational Excellence Working Group

GOP Lesson Learned 3/13/13

NERC Lesson Learned: EMS System Outage and Effects on System Operations

Problem as stated in NERC Lesson Learned
An entity's Energy Management System (EMS) began to lose data necessary for visibility of portions of its transmission network causing functionality and/or solution interruptions for some of its EMS operational tools. No loss of load occurred during this event and it was quickly determined to not be a cyber security event.

GOP Lessons Learned – Loss of EMS or Communication System
During the loss of an EMS or communications systems, the Transmission Operator (TOP) may lose all access to data from the system, both transmission system information and generation information. Generating plants may also lose base points and electronic contact with the System Operator. This loss of data access could appear at the plants to be either no base point data or frozen base point data. In general, the response from the TOP's System Operator could be as follows:

- The System Operator verbally notifies affected generating plants indicating the System Operator lost data communications and that plants need to verbally notify them of any change in plant status.
- The System Operator also communicates that they expect the generating plants to follow their scheduled generation.
- Generating plants continue to follow their generating schedules.
- The System Operator with the expectation that generating plants are following their generation schedule runs the system by judiciously choosing which plants to move and then verbally dispatching those plants.



'Any ship can be a minesweeper. Once.'

- Naval Ops Manual



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Committed to Improving Bulk Electric System Reliability

Thank you!

www.GeneratorForum.org