



RIC 2009

**Nuclear Power Plant/Electric Grid
Regulatory Coordination and
Cooperation**

George Wilson
NRR/ADES/DE/EEEE
March 11, 2009

1



General Session Information

- **Badges and Identification** – Please remember to visibly display name badges throughout the duration of the RIC.
- **Cell Phones and Pagers** – At this time, please turn off or silence cell phones and pagers.
- **Presentation Materials** – All provided electronic presentation materials will be posted on the U.S. NRC RIC website at www.nrc.gov, keyword: RIC.
- **Evaluations** – Please provide us with your valuable input via the Session Evaluation Form or e-mail comments directly to RICHelpDesk@nrc.gov.

2



**Nuclear Power Plant
Regulator's Perspective**

3



Overview

- The 2003 Northeast Blackout, Electric Sector De-Regulation, and Nuclear Power Plant (NPP) Loss of Offsite Power (LOOP) Event frequencies have caused the Nuclear Regulatory Commission to have concerns with electric grid reliability.
- NPP safety is significantly affected by grid reliability. Offsite power (Electric Grid) is the preferred power supply for NPP Safety Systems.

4



Overview (Cont.)

- Nuclear Safety and Grid Reliability goals are achieved through coordination and cooperation between Regulators and Grid Operators
 - Nuclear Regulatory Commission (NRC)
 - Federal Energy Regulatory Commission (FERC)
 - North American Electric Reliability Corporation (NERC/Electric Reliability Organization under FERC)
 - PJM Interconnection (Regional Transmission Organization/Example of a Grid Operator)
- Formal Memorandums of Agreement (MOAs) have been established between the NRC, FERC and NERC to facilitate this goal at the regulatory level

5



Regulations and Standards

- One of the key tools ensuring nuclear safety and grid reliability is the development of well defined and enforceable regulations and standards
 - NRC Regulations and Regulatory Guides supporting Nuclear Safety
 - NERC/FERC Grid Reliability Standards

6



Regulations and Standards (Cont.)

- NRC participates with NERC/FERC, Transmission Entities (Such as PJM) and the industry in the development of Grid Reliability Standards and Regulations
 - Some recent examples include NERC NUC-001 (Nuclear Plant Interface Coordination) and the ongoing work on the NERC Critical Infrastructure Protection (CIP) standards
 - NRC also reviewed and commented on 10 additional NERC Standards which affect interfacing requirements of NPPs

7



Electric Grid Event Analysis

- NRC supports and participates in Grid Event Analyses for mutual understanding of these events and their affects on the inter-relationship between NPPs and the grid and ultimately nuclear safety.
 - For example, NRC participated with teams evaluating the 2003 Blackout and more recently the 2008 Florida Blackout

8



Operating Experience Sharing

- Consideration of Operating Experience is important to ensure that industry lessoned learned are used to prevent events. Sharing of this experience is particularly important between entities with a interface (NPP and the grid).
- NRC, FERC and NERC are committed to collectively learning from such experience and communicate regularly to facilitate the process.
- NRC, FERC and NERC notify each other when events occur (in near real-time) which would be of interest to the other parties

9



Electric Grid Situation Awareness

- Grid Situation Awareness is important in support of various NRC regulatory functions to ensure that grid reliability is appropriately factored into decisions on NPP operations and licensing
 - NPPs licensees sometimes request temporary relaxation of Technical Specification requirements due to plant degraded conditions. Proper evaluation may require grid reliability status awareness to properly assess nuclear safety consequences
 - Evaluations of NPP power uprates and new NPP license requests require proper evaluation of their impacts on grid reliability

10



Other Perspectives

- FERC - Electric Grid Regulator
- NERC – Electric Reliability Organization
- PJM – Transmission Operator

11
