

September 10, 2004

MEMORANDUM TO: Jose A. Calvo, Branch Chief
Electrical & Instrumentation and Controls Branch
Division of Engineering
Office of Nuclear Reactor Regulation

FROM: John G. Lamb, Senior Project Manager (/RA by JLamb)
Electrical & Instrumentation and Controls Branch
Division of Engineering
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MEETING HELD ON APRIL 15, 2004, BETWEEN THE
NUCLEAR REGULATORY COMMISSION STAFF AND INDUSTRY
REPRESENTATIVES REGARDING ELECTRICAL GRID RELIABILITY

The Nuclear Regulatory Commission (NRC) staff met with industry representatives regarding electrical grid reliability at the NRC headquarters on April 15, 2004. A public meeting notice for the subject meeting was issued on April 2, 2004, and a copy of the meeting notice was posted on the NRC's external (public) web page (ADAMS Accession Number ML040930316). Attachment 1 contains the meeting attendees.

The purpose of the meeting was to discuss with the industry representatives the results of a survey regarding the loss-of-offsite power (LOOP). This was a Category 2 public meeting. The meeting consisted of introductions; presentations by the Nuclear Energy Institute (NEI), North American Reliability Council (NERC), the Institute of Nuclear Power Operations (INPO), and the Electric Power Research Institute (EPRI); discussions; questions from the public; conclusions; and closing remarks.

The Attachment 2 contains the presentation slides from NEI, NERC, INPO, and EPRI.

NEI presented the results of a six-question survey, as well as additional industry responses to staff questions posed at a previous public meeting on March 4, 2004. The March 4, 2004, meeting summary is available on the NRC's external (public) web page (ADAMS Accession Number ML041050207). NEI indicated that 43 units responded to its survey, of which 16 respondents indicated that their units had experienced LOOP events.

NERC presented a brief overview of the results of the U.S-Canada Power Outage Task Force and the 46 recommendations. The final U.S. - Canada Power Outage Task Force Report dated April 2004 is available at www.energy.gov. U.S. - Canada Power Outage Task Force found no fault with any U.S. nuclear power plant and that all the affected nuclear power plants had performed as designed in shutting down or disconnecting from the grid. NERC discussed its blackout recommendations such as to correct the blackout causes, to strengthen compliance programs, to establish new compliance template standards, vegetation management, and to implement increased/improved grid operator training. Further information is available at www.nerc.com.

INPO briefed the NRC staff on Significant Operating Experience Report (SOER) 03-1, "Emergency Power Reliability." While many aspects and recommendations of SOER 03-1 are partially addressed in earlier SOERs as well as other industry and regulatory guidance documents, a key point of SOER 03-1 is that emergency power system failures have continued against the backdrop of increased challenges to the electrical grid system stability. SOER 03-1 recommends that existing emergency power system design, operation, and maintenance practices be reviewed for common-cause and common-mode failure vulnerabilities, and that emergency power system modification processes apply rigorous controls. INPO also updated the NRC staff on revisions it is considering to SOER 99-1, "Loss of Grid."

EPRI briefed the NRC staff on its review of LOOP events at U.S. nuclear power plants and the results of its 2003 survey of configuration risk management practices at U.S. plants. Conclusions from the configuration risk management survey are (1) configuration risk management has been primarily focused on managing risk due to planned or unplanned changes in plant conditions (e.g., operators placing components out of service for maintenance), (2) electrical grid reliability issues are addressed in the configuration risk management, and (3) risk calculations are usually triggered by changes to in-house plant equipment operational or availability status and not by changes in the electrical grid status.

On April 15, 2004, the NRC staff issued Regulatory Issue Summary (RIS) 2004-05, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power," reminding licensees of three NRC regulations associated with offsite power supply: (1) Title 10 of the *Code of Federal Regulations* (10 CFR), Appendix A, General Design Criterion 17 (GDC 17) on emergency power requirements for offsite electric power systems, or plant technical specifications on offsite power operability for those reactors not licensed to GDC 17, (2) the Station Blackout Rule, Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.63, "Loss of all alternating current power," and (3) the Maintenance Rule, 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants."

The NRC staff announced that Temporary Instruction (TI) 2515/156, "Offsite Power System Operational Readiness," was near completion. TI 2515/156 was issued on April 29, 2004 and can be found at the NRC public website: <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/temp-instructions/index.html>. The TI was for resident inspectors to find out how nuclear power plant needs are considered in the electrical grid management, whether the transmission operators are alerted to a nuclear power plant's load when it begins shutting down, and the communication protocol between licensees and the electrical grid operators on voltage conditions. TI 2515/156 focused on (1) identification of configurations to ensure the required minimum voltage at switchyards, (2) whether licensees are aware of how the grid is managed and what communication channels are in place when the grid has problems, (3) does the transmission operator know the load given when shutdown, and (4) onsite power systems maintenance activities.

Industry representatives questioned why the NRC staff was not implementing a phased approach and focusing on the nuclear power plants that were effected during the August 14, 2003, blackout. The industry representatives suggested that the NRC staff pilot TI 2515/156. Industry representatives noted that the NERC activities are a 3-year phased effort starting with the most susceptible organizations. In addition, industry representatives pointed out that the NRC staff activities overlap with INPO SOER 03-01 recommendations and a forthcoming revision to SOER 99-1.

The NRC staff acknowledged the industry's concerns; however, the August 14, 2003, blackout was a significant event that warranted the NRC staff's heightened level of awareness. The NRC staff would like an understanding of the entire industry as opposed to an in-depth look at some nuclear power plants. In the near-term, the NRC staff wanted to (1) raise awareness, (2) position itself to verify licensees' current status, and (3) monitor as offsite power readiness for the summer 2004. In the long-term, the NRC staff wants to look at the current regulations and their implementation and consider further regulatory actions if appropriate.

Attachments: As stated

1. Attendees
2. Handouts (ML042580063)

Contact: J. Lamb, EEIB/NRR
415-1446

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OFFICE	PM:EEIB	EEIB:NRR	SC:EEIB
NAME	JLamb	TKoshy*	RVJenkins
DATE	09/10/04	09/08/04	09/10/04

OFFICIAL RECORD COPY

**GRID RELIABILITY TASK FORCE
MEETING ATTENDANCE
April 15, 2004**

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