

September 25, 2001

MEMORANDUM TO: Stuart A. Richards, Director  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

FROM: Leonard N. Olshan, Project Manager, Section 1 **/RA/**  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF AUGUST 28, 2001, MEETING WITH EPRI TO DISCUSS  
TR-102323-R2, "GUIDELINES FOR EMI TESTING IN POWER PLANTS"

On August 28, 2001, NRC and the Electric Power Research Institute (EPRI) met in Rockville, Maryland to discuss EPRI's report TR-102323-R2, "Guidelines for EMI Testing in Power Plants." Attachment 1 is a list of the meeting attendees.

During the meeting, the NRC and EPRI discussed the items in Attachment 2 and agreed that TR-102323-R2 should be revised to satisfy the NRC's comments. EPRI committed to submit a draft revision to TR-102323-R2 for NRC review.

Project No. 669

Attachments: 1. Attendance List  
2. Discussion Items

cc w/encl: See next page

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\*See Previous

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Electric Power Research Institute

Project No. 669

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MEETING TO DISCUSS EPRI REPORT

"GUIDELINES FOR EMI TESTING IN POWER PLANTS"

AUGUST 28, 2001

MEETING ATTENDEES

**EPRI**

R. Shankar

**OTHER**

R. Brehm, Tennessee Valley Authority

N. Eisenmann, Entergy Nuclear

J. Hazeltine, Wyle Laboratories

J. Mauck, Framatome

J. Shank, PSEG Nuclear

M. Syed, TXU-Electric

**NRC**

H. Li

P. Loeser

E. Marinos

S. Mazumdar

L. Olshan

## **Agenda for Meeting on August 28, 2001 TR 102323, Rev. 2**

(1) Figure 7-2, High-Frequency Conducted Testing Limits and Margin, Page 7-3

- a. The Equipment Susceptibility Limit has margin of 5dBMicroA (1.8 times) over Highest Composite Plant Emissions Envelope. Earlier in TR 102323, Rev. 1, the TR 102323 Working Group agreed that this margin shall be at least 8 dBMicroA (2.9 times). At 10 KHz the Highest Composite Plant Emission Envelope is 92 dBMicroA and Equipment Emissions Limit is 90 dBMicroA. So installations of a couple of new equipment can deplete the margin completely. Because the Highest Composite Plant Envelope is based on the worst data from seven nuclear plants only it does not guarantee that no plant can have Plant Emission over this curve. So it is critical to adhere to the margin of 8dBMicroA.
- b. Figure 5-2 shows two Equipment Susceptibility Limit curves for Power and Signal cables while Figure 7-2 shows only one. What factors have been considered to eliminate the curve for Signal cables?

(2) Low-Frequency Conducted Testing Limits and Margin Analysis

Figure 5-1 shows two Equipment Susceptibility Limit curves while Figure 7-1 shows only one curve. What factors have been considered to eliminate one of the curves?

(3) Figure 5-1, Low-Frequency Conducted Susceptibility Testing Limit, Page 5-9, Figure 5-2, High-Frequency Conducted Susceptibility Testing Limit, Page 5-11, Figure 5-5, High-Frequency Conducted Emissions Testing Limit, Page 5-21, Figure 5-6, Low-Frequency Radiated Emissions Testing Limit, Page 5-23, and Figure 5-7, High-frequency Radiated Emissions Testing Limit, Page 5-25.

Discuss the measures taken to ensure that installation of new equipment will not damage any existing equipment or system.

(4) Figure 4-4, Composite Highest Observed Plant Radiated Emissions (RE01) Envelope at Seven Nuclear Power Plants, Page 4-9

Why the Highest Composite Plant Emissions Envelope is set so much above the worst case plant data (compared to Figures 4-2, 4-3, 4-5, and 4-6)?

(5) Electrostatic Discharge (ESD), Notes, Page 5-17

This test has been made optional for safety-related equipment based on the fact that safety-related equipment are not susceptible to ESD common-mode failure. Provide justification for this conclusion.

(6) Surge, Page G-2

Surge test has been reduced from 3 to 2 kV based on existing compatibility margins documented. Provide detail reference to the documents.

(7) Report Summary, Page v.

Why it is not recorded that this revision incorporates changes related to MIL-STD-461E and IEC 61000 ? Why specify object of the report is to obtain NRC approval?

(8) Electric Fields, Page 3-2. It is stated "The NRC SER on the modification at Zion[13] incorrectly states,". Provide justifications why this wording is critical in the plant data evaluation.

(9) Notes, Page 5-18. It is stated "This test is required unless there are criteria for ..". Provide reference to criteria or define them.

(10) Editorial Comments.

There are several editorials comments which we would like to discuss at the meeting.