

July 9, 1993

Docket Nos. 50-272
and 50-311

MEMORANDUM FOR: Michael L. Boyle, Acting Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

FROM: James C. Stone, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

SUBJECT: DIGITAL FEEDWATER CONTROL SYSTEM, SALEM NUCLEAR GENERATING
STATION, UNITS 1 AND 2

DATE & TIME: July 19, 1993
10:00 a.m.

LOCATION: Salem Nuclear Generating Station Processing Center
Room 1
Public Service Electric and Gas Company
Hancocks Bridge, New Jersey

PURPOSE: To discuss questions concerning the digital feedwater control
system (see attached agenda).

PARTICIPANTS*: NRC PSE&G

J. Stone	H. Onorato	L. Rajowski
S. Athavale	M. Metcalf	C. Waite
R. Skokowski	M. Bursztein	

/S/

James C. Stone, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Meeting Agenda

cc w/enclosure
See next page

*Meetings between NRC technical staff and applicants or licensees are open for interested members of the public, petitioners, intervenors, or other parties to attend as observers pursuant to "Open Meeting Statement of NRC Staff Policy," 43 Federal Register 28058, 6/28/78.

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DATE	7/19/93	7/19/93	7/19/93		

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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A handwritten signature in cursive script that reads "James C. Stone".

James C. Stone, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

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Public Service Electric & Gas
Company

Salem Nuclear Generating Station,
Units 1 and 2

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AGENDA FOR JULY 19, 1993 MEETING

1. Questions about Procedure NC.NA-AP.22-0054(Q), Rev. 1

a. The procedure doesn't provide much guidance with respect to post modification testing of software. For instance, the procedure only refers to requirement tracing and doesn't mention static and dynamic testing. This is important because there are many different potential errors that can only be detected with a particular type of testing (i.e., requirement tracing, static, and dynamic).

b. The procedure describes that the post modification tests are developed in the work plan by the assigned engineer and only witnessed by the Verification and Validation (V&V) Group. How will this ensure adequate independence from the software design? Why isn't the V&V Group involved in the development of the post modification tests?

2. Questions about WCAP-11313

a. WCAP-11313 only addresses radioactive EMI and doesn't address conductive EMI. Since digital equipment is also susceptible to conductive EMI, what type of testing was performed on the MSS to ensure that it will operate satisfactorily if subjected to conductive EMI?

b. WCAP-11313 describes at least six cases where the O/P signals are degraded to bad signals between 66 and 74 MHz or between 66 to 86 MHz, including at least one case where the O/P signal goes to zero temporarily at 74 MHz. A bad signal is defined as a signal that has increased or decreased beyond the specified limits. Why is this acceptable for satisfactory operations of the MSS?

3. State of New Jersey Questions

PSE&G recently experienced problems with the Salem, Unit 2 rod control system supplied by Westinghouse. This is the subject of NRC Information Notice 93-46 and resulted in an NRC Augmented Inspection Team Investigation. The BNE is concerned that the advanced digital feedwater control system may be susceptible to electronic failures similar to those experienced in the rod control system. Once the causes of failure in the rod control system are completely understood and corrected, a detailed review of the design of the feedwater control system must be performed to assess the system's ability to withstand voltage spikes or any other anomaly identified to be a contributing cause of the rod control failures.

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