



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 13, 2010

LICENSEE: PSEG Nuclear LLC

FACILITY: Salem Nuclear Generating Station, Units 1 and 2 and Hope Creek Generating Station

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JULY 29, 2010, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND PSEG NUCLEAR LLC, CONCERNING FOLLOW-UP QUESTIONS PERTAINING TO THE SALEM NUCLEAR GENERATING STATION, UNITS 1 AND 2, AND HOPE CREEK GENERATING STATION LICENSE RENEWAL ENVIRONMENTAL REVIEW

A teleconference was held on July 29, 2010, between the U.S. Nuclear Regulatory Commission (NRC) staff, PSEG Nuclear LLC representatives, and contractor support staff for each. The purpose of this call was to clarify certain aspects of PSEG's responses to the May 20, 2010, and May 21, 2010, revised requests for additional information (RAIs) concerning the severe accident mitigation alternatives (SAMA) analyses, which were submitted with the Hope Creek Generating Station and Salem Nuclear Generating Station, Units 1 and 2, License Renewal Environmental Reports.

Enclosure 1 provides a listing of the participants, and Enclosure 2 contains a resolution to each RAI clarification discussed during the conference call.

The applicant had an opportunity to review and comment on this teleconference summary.

A handwritten signature in black ink, appearing to read "Charles Eccleston".

Charles Eccleston, Project Manager  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-272, 50-311, and 50-354

Enclosures:  
As stated

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LIST OF PARTICIPANTS ON THE JULY 29, 2010, TELEPHONE CONFERENCE CALL  
CONCERNING FOLLOW-UP QUESTIONS PERTAINING TO THE SALEM NUCLEAR  
GENERATING STATION, UNITS 1 AND 2 AND HOPE CREEK GENERATING STATION  
LICENSE RENEWAL ENVIRONMENTAL REVIEW

**PARTICIPANTS**

**AFFILIATIONS**

C. Eccleston	U.S. Nuclear Regulatory Commission (NRC)
R. Gallucci	NRC
J. Stavely	PSEG Nuclear LLC (PSEG)
A. Fakhar	PSEG
H. Gregory	PSEG
N. Ranek	Exelon Generation LLC (Exelon, PSEG contractor)
A. Fulvio	Exelon
G. Krueger	Exelon
C. Wilson	Exelon
J. O'Rourke	Exelon
R. Wolfgang	ERIN Engineering & Research Inc. (ERIN, PSEG contractor)
D. MacLeod	ERIN
L. Lee	ERIN
S. Short	Pacific Northwest National Laboratory (PNNL, NRC contractor)
R. Young	PNNL
R. Schmidt	PNNL

SALEM NUCLEAR GENERATING STATION, UNITS 1 AND 2 AND  
HOPE CREEK GENERATING STATION  
(Summary of the Conference Call)

A teleconference was held on July 29, 2010, between the U.S. Nuclear Regulatory Commission (NRC) staff and PSEG Nuclear LLC representatives, and contractor support staff for each. The purpose of this call was to clarify certain aspects of PSEG's responses to the May 20, 2010, and May 21, 2010, revised requests for additional information (RAIs) concerning the severe accident mitigation alternatives (SAMA) analyses, which were submitted with the Hope Creek Generating Station and Salem Nuclear Generating Station, Units 1 and 2, License Renewal Environmental Reports. The resolution reached during the teleconference for each clarification request is shown below.

**Request for Clarification  
Regarding PSEG Responses to Salem Nuclear Generating Station, Units 1 and 2  
SAMA RAIs**

1. RAI 1.c. PSEG provided a description and SAMA impact analysis of 8 "key" findings from the November 2008 PWR Owner's Group, and stated that the scope of the peer review included Level 1, Level 2, and internal flooding. The summary provided does not sufficiently describe the results of the peer review and, furthermore, none of the "key" findings are related to the new Level 2 model. Provide an assessment of the impact on the SAMA analysis of all Supporting Requirements determined by the peer review team to not meet Capability Category II or III.

*Resolution:* This clarification request was re-written as shown below. PSEG will provide a response to the revised clarification request as agreed to during the teleconference.

RAI 1.c. PSEG provided a description and SAMA impact analysis of 8 "key" findings from the November 2008 PWR Owner's Group, and stated that the scope of the peer review included Level 1, Level 2, and internal flooding. The summary provided does not sufficiently describe the results of the peer review and, furthermore, none of the "key" findings are related to the new Level 2 model. Provide a table of each supporting requirement that is either Capability Category 1 or Not Met. For each of these supporting requirements, provide an assessment of the impact on the SAMA analysis of not meeting Capability Category 2 or 3; or, alternatively, justify that the capability category assignment is adequate for the SAMA application. In addition, provide an overall assessment of the impact on the SAMA analysis of all Supporting Requirements determined by the peer review team to not meet Capability Category 2 or 3.

2. RAI 5.b. PSEG provided a revised basic events' importance list based on an updated PRA model (MOR Rev. 4.3) and correlated the important events to existing SAMAs for all but three basic events. For these three basic events, PSEG identified new SAMAs and provided a cost-benefit analysis of each using the MOR Rev. 4.3 PRA model. The response to RAI 1.d states that the updated MOR Rev. 4.3 has an internal events CDF

ENCLOSURE 2

of 2.20E-05/yr compared to 4.77E-05/yr for MOR Rev. 4.1 used in the SAMA analysis and that this reduction is due to plant design and procedure changes. Clarify whether any of the PRA model changes since MOR Rev. 4.1 may have increased the risk significance of the MOR Rev. 4.1 important basic events and, if so, assess the impact on the SAMA evaluation (i.e., would any SAMAs previously determined to not be cost-beneficial become cost-beneficial if their benefits were assessed based on MOR Rev. 4.3?).

*Resolution:* PSEG will provide a response as agreed to during the teleconference.

3. RAI 7.b. PSEG did not provide the requested assessment. Identify the highest priority SAMAs for implementation and qualitatively assess how implementation of these SAMAs may affect the cost-benefit evaluation of the remaining SAMAs.

*Resolution:* PSEG and its contractors responded adequately to this clarification request during the teleconference. No written response will be provided by PSEG.

#### NRC/PSEG Phone Call Clarification Request

RAI 6.f. PSEG stated that "The NRC has previously indicated a preference to not adjust the external events multiplier when quantifying the averted cost-risk for SAMAs that impact both internal and external events, even if the external events contribution is explicitly quantified." Provide the basis for this statement.

*Resolution:* PSEG and its contractors responded adequately to this clarification request during the teleconference. No written response will be provided by PSEG.

### **Request for Clarification Regarding PSEG Responses to Hope Creek Generating Station SAMA RAIs**

1. RAI 1.d.
  - a. On Page E-54 of the ER, eight supporting requirements are indicated to not have been met. Only six are addressed in the response to this RAI. Clarify the discrepancy.
  - b. The discussion of the resolution of the findings for SR SC-A6 appears to imply that both the diesel driven fire pump and the fire pumper truck, used in tandem, are necessary to provide injection into the RPV. Clarify the success criteria requirements and how the PRA models these requirements.

*Resolution:* PSEG will provide a response to both 1a and 1b as agreed to during the teleconference.

2. RAI 1.e. Describe the criteria used to determine if plant modifications or procedure changes require a PRA model update. The conclusion that an upgrade is not necessary should be based on an assessment that none of the changes would impact the conclusions of the SAMA analysis rather than the other way around as is implied by the RAI response.

*Resolution:* PSEG will provide a response as agreed to during the teleconference.

3. RAI 5.a. While the approach taken for identifying SAMAs that reduce the importance of initiating events by addressing other failures in the initiating event sequences will identify valid SAMA candidates, there might be additional, potentially more cost effective SAMAs that reduce the frequency of the initiating event itself rather than other failures in the sequences. This may be true, particularly if the site-specific contribution to the initiating event frequency includes a failure that might be easily mitigated. Discuss this aspect of the identification of SAMAs for important initiating events and provide assurance that a review of the contributors to the initiating event frequencies has been made and there are no such viable SAMAs.

*Resolution:* PSEG will provide a response as agreed to during the teleconference.

4. RAI 5.d. This RAI requests the consideration of the incorporation of a passive containment vent. The response indicates that a major reason for such a design not being feasible is that such a design would limit the flexibility of the use of the vent system. Discuss the feasibility of the option of having a manual bypass in parallel with the passive system.

*Resolution:* PSEG will provide a response as agreed to during the teleconference.

5. RAI 5.j.
  - a. The evaluation of seismic sequence %IE-SET37 indicates that credit for a SAMA reinforcing the 125V DC panel anchorages is reduced by the possibility that 120V AC power would be lost and the associated requirement for the operators to control the plant without 120V AC. The 120V AC power loss is addressed by SAMAs 36 and 37. While the impact of SAMA 36 is assessed in the evaluation of the SAMA to strengthen the 125V DC panels, the impact of implementing SAMA 37 is not addressed. If SAMA 37 is implemented, the benefit of the 125V DC panel SAMA would be increased. Provide a discussion and evaluation of the synergism between these SAMAs.
  - b. Provide Table 5j-4 that is cited on Page 70 but not included.

*Resolution:* PSEG will provide a response to both 5a and 5b as agreed to during the teleconference.

6. RAI 5.m. Provide Table 5m-1 that is cited on Page 74 but not included.

*Resolution:* PSEG will provide a response as agreed to during the teleconference.

7. RAI 6.c. The response to RAI 6.b indicates that considerable hardware changes at both Salem and HCGS are involved with SAMA 5 to allow the GTG to be aligned with the HCGS buses. The response to RAI 6.c states that the GTG is currently credited in the HC108B model in a limited set of LOOP circumstances. Describe in more detail the added capability for utilization of the GTG associated with SAMA 5 compared to the existing capability, the impact of the modifications associated with SAMA 5 on the circumstances for which the GTG can be credited, and how the existing capability and the added capability are modeled in the HC108B PRA for the sensitivity study mentioned in the RAI response.

*Resolution:* PSEG will provide a response as agreed to during the teleconference.

8. RAI 8. PSEG did not provide the requested assessment. Identify the highest priority SAMAs for implementation and qualitatively assess how implementation of these SAMAs may affect the cost-benefit evaluation of the remaining SAMAs.

*Resolution:* PSEG and its contractors responded adequately to this clarification request during the teleconference. No written response will be provided by PSEG.

#### Phone Call Clarification

RAI 7.a. SAMA RAI 7.a-1 was determined to be potentially cost-beneficial and states this SAMA “will be evaluated in parallel with cost effective SAMAs 17 and 18...” Clarify that this is referring to the Plant Health Committee review process described in the Environmental Report and in response to RAI 8.

*Resolution:* PSEG and its contractors responded adequately to this clarification request during the teleconference. No written response will be provided by PSEG.

August 13, 2010

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Charles Eccleston, Project Manager  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

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As stated

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NAME	YEdmonds	CEccleston	BPham	CEccleston
DATE	08/12/10	08/12/10	08/13/10	08/13/10

OFFICIAL AGENCY RECORD

Memorandum to PSEG Nuclear LLC from C. Eccleston dated August 13, 2010

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