From: Robert Palla
To: Richard Emch
Date: 12/29/04 12:42:48 PM
Subject: Follow-up Items for Nine Mile Point

Rich - attached is a description of items where we need further information from the licensee in order to complete the SAMA evaluation for Nine Mile Point. Can you pls forward this to the licensee ASAP so that we might be able to discuss it - hopefully next week. If questions arise on Thursday or Monday (while I'm on leave) pls contact Kim Green. Thanks Bob

CC: Leslie Fields; Michael Masnik

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Subject: NMP RAI Response Follow Up Questions
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From: Jennifer Davis

Created By: JXD10@nrc.gov

Recipients
constellation.com
carla.logan CC (carla.logan@constellation.
Dennis.Vandeputte (Dennis.Vandeputte@cons
Peter.Mazzaferro CC (Peter.Mazzaferro@cons

islinc.com
kim CC (Internet: Kim@islinc.com)

nrc.gov
owf2_po.OWFN_DO
RLP3 CC (Robert Palla)

nrc.gov
owf4_po.OWFN_DO
LCF CC (Leslie Fields)
MTM2 CC (Michael Masnik)

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REQUEST FOR CLARIFICATION ON RESPONSES TO RAIs FOR NMP SAMAs

RAI 1a
In the response to RAI 1a, it is stated that the BWROG reviews (performed in March 1998 and April 1997) were of the IPEs. Since the reviews were performed approximately 5 years after the IPEs were submitted to NRC, please confirm that the documents reviewed were in fact the IPEs, and not a subsequent revision. It is also stated that the most risk significant observations of the BWROG reviews were incorporated into the current PRA models. Were any Level A or B Facts and Observations (F&Os) from the reviews not implemented in the current PRA models? If so, please provide the original F&Os and discuss their impact on the SAMA analysis.

RAI 1c
For NMP1, the IPEEE indicates that two components don't meet the 0.3 g review level earthquake (RLE). These are battery boards 11 and 12 (a HCLPF of 0.27g) and containment spray raw water pumps (a HCLPF of 0.29g). The failure of these two components would not be expected to be correlated and hence each would contribute to a separate core damage sequence. In the present model, these two items are presumably included in the fragility COMP2, which is based on a HCLPF of 0.3g, and which is assumed to lead directly to core damage. The unconditional failure frequency for COMP2 is 1.0E-06 per year using the EPRI hazard curve and 4.5E-06 per year using the NUREG hazard curve. Because the HCLPF for each of these components is less than 0.3g, their failure could therefore lead to core damage sequences with a frequency somewhat greater than the above values for COMP2. Please provide a further evaluation of potential SAMAs to address sequences due to seismic failure of these components, or justification as to why such SAMAs would not be cost-beneficial.

RAI 1d
The information provided in response to RAI 1d indicates some substantial changes in the relative contribution from significant release categories, as compared to the IPE results. For example for Unit 1, the total frequency of high magnitude release categories has decreased from 42% to 22% of the total CDF, the frequency of high magnitude releases for Class IA accidents has increased from 6% to 31% of the class total, and the frequency of high magnitude releases for Class ID accidents has increased from 6% to 10%. For Unit 2, the "no release" category frequency has decreased from 58% of the total CDF to 26%, the total frequency of high magnitude releases has decreased from 53% to 25% of the total CDF, the frequency of high releases for Class IA accidents has decreased from 51% to 15% of the class total, the frequency of high releases for Class IB accidents has increased from 1% to 15%, and the frequency of high releases for Class ID accidents has decreased from 99% to 68%. Given that, as stated, no major changes were made in the Level 2 analysis, one might expect the distributions, particularly within a class, to be largely unaffected. Please explain the reasons for the above differences.

RAI 2a
In response to RAI 2a, tables containing basic event importance information were provided for NMP Units 1 and 2. The right column of the tables identifies the SAMAs that address the event. Several SAMAs are identified in these tables, that are not discussed or defined anywhere in the ER or RAI responses. For the following SAMAs, please provide a brief description and evaluation information (similar to that provided in Section F.3) justifying the disposition of the SAMA (i.e., why it did not make it to Phase 2):
Unit 1: SAMAs 29, 30, 64, 106, 110, 148, 154, and 180

Unit 2: SAMAs 57, 58, 150, 153, and 161.

RAI 2f

The IPE SER for NMP Unit 1 identifies the following potential improvements:

1a. shedding the non-safety battery load
1b. portable battery charger (for same purpose as 1a)
2. improved calibration of low vessel pressure ECCS permissive sensors
3. capability to locally operate certain air-operated valves
4. increased drywell head preload
5. modify containment venting procedure
6. improved operator training in areas where the IPE credited recovery

The response to RAI 2f does not address items 3, 4, and 5 above, and only partially addresses item 6 and several other items. Please provide the following additional information:

a. Item 1a: Load shedding procedures for Station Blackout is stated to be covered by SAMA 211. While this SAMA addresses the DC system it does not appear to include load shedding. Please explain.

b. Item 3: The IPE discussion mentions valves to vent containment as well as to provide torus cooling. It appears that SAMA U1-212 addresses containment vent valves. Please address improvements/SAMAs related to torus cooling.

c. Item 4 was not addressed in the response. It appears that SAMA 208 may address this issue. Please explain.

d. Item 5 was not addressed in the response. Please address.

e. Item 6: The IPE SER lists improved operator training for loss of screenhouse intake. This does not appear to have been addressed by a SAMA, nor has its disposition been addressed. Please explain.

f. Item 6: The IPE lists improved operator training for loss of service water. It appears that SAMA 213 may address this issue (see RAI response 2d), but this SAMA was screened out on the basis that it was not applicable to unit design, even though the potential for procedure/training improvement was discussed in the Unit 1 IPE. Please explain.

The IPE SER for NMP Unit 2 identifies the following potential improvements:1. isolate standby gas treatment filters with valves
2. EOP procedure for aligning containment vent to locally open the outside purge valve when instrument air or division I emergency AC is unavailable
3. Procedure to open doors from aux building into pump rooms upon loss of cooling to HPCS, RCIC, and LPCI pump rooms
4. Guidance on opening doors and isolation of flood source
5. Low pressure injection test and maintenance procedures
6. SBO procedures

The response to RAI 2f does not address items 2 and 4 above and only partially addresses several other items. Please provide the following additional information:

a. The IPE apparently took credit for manual valves to allow bypassing the SGTS in order to vent the containment. This improvement involves providing these valves. As noted in the RAI response, the use of blank flanges and procedure changes were implemented in lieu of the hardware modifications. It would appear that the reliability of the current approach is less than that for the proposed modification. It is noted that SAMA 219 appears to address this issue but the cost of implementation is for a fully-automatic system, which could be much more than a manually-actuated system. Please address whether a manually-actuated vent system could be cost-beneficial alternative.

b. Item 2 was not addressed in the response. Please address.

c. Item 3: The auxiliary bay pump room cooling enhancement identified in the IPE was to provide a procedure for opening the room doors. This is not part of SAMA 23 and it is not clear if it is part of SAMA 213. Please explain.

d. Item 4 was not addressed in the response. It appears that SAMA 223 may address a portion of this issue (i.e., control building flooding). Please address the other scenarios discussed in the IPE SER.

RAI 3b

In response to RAI 3b, the release fractions for each release category are provided. It is stated that these were taken from NUREG/CR-4551, Vol. 4, Rev. 1, Part 1 which is the NUREG-1150 Level 2 analysis for Peach Bottom. A review of the release fractions used for NMP SAMA indicates that only one of the high magnitude release categories (NMP2 late-high category) has a total release fraction greater than 10% for iodine. The others range from 4.8% to 9.5% and do not actually meet the definition of a high magnitude release given in response to RAI 1e (i.e., a CsI release of > 10%.) In contrast, a review of NUREG/CR-4551 indicates that many of the source terms evaluated for Peach Bottom exceed 10%, but those source terms were not adopted for NMP. It is also noted that the I and Cs release fractions provided for several of the release categories for both units are identical or differ by a factor of 2 or 10 (suggesting that the release fractions were arbitrarily adjusted.) Please describe in more detail how the release fractions were obtained and justify the apparently low release fractions for the high magnitude release categories.

RAI 4

In addressing SAMA U1-220, it is stated that conservatism exists in the model. As we understand it, implementing the SAMA by upgrades to the 4160V to 480V transformers would eliminate the need for load management actions by the operators. The model change eliminates load management failure from consideration, which appears consistent with implementation of the hardware modification. Please justify the stated conservatism in the benefit calculation. Furthermore, the response states that when a detailed cost estimate for the modification is performed, the actual cost will be higher than the value used in the SAMA analysis. Please provide a more realistic estimate of the implementation cost.