

September 8, 2008

LICENSEE: AmerGen Energy Company, LLC

FACILITY: Three Mile Island Nuclear Station, Unit 1

SUBJECT: SUMMARY OF CONFERENCE CALL WITH AMERGEN ENERGY COMPANY, LLC, TO DISCUSS RESPONSES TO SEVERE ACCIDENT MITIGATION ALTERNATIVES REQUEST FOR ADDITIONAL INFORMATION FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1 (TAC NO. MD7702)

On August 12, 2008, the U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives from its contractor (Pacific Northwest National Laboratory) conducted a conference call (teleconference) with AmerGen Energy Company, LLC (AmerGen) staff and its contractor (ERIN Engineering and Research, Inc.), to obtain clarification regarding AmerGen's responses to the NRC's request for additional information (RAIs) about the Three Mile Island Nuclear Station, Unit 1 (TMI-1) severe accident mitigation alternatives (SAMA) analysis. The NRC SAMA RAI letter was dated May 21, 2008 (ML081330714), and AmerGen's response was dated July 17, 2008 (ML082040144).

NRC staff and its contractor representatives discussed their follow-up questions concerning the SAMA RAI responses with AmerGen staff and its contractor representatives. Clarification of specific line items was obtained. Enclosure A contains a list of teleconference participants. Enclosure B contains the NRC's follow-up questions and summarizes the responses provided by AmerGen during the teleconference. No staff decisions were made during the teleconference.

RAI

Sarah Lopas, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-289

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NRC staff and its contractor representatives discussed their follow-up questions concerning the SAMA RAI responses with AmerGen staff and its contractor representatives. Clarification of specific line items was obtained. Enclosure A contains a list of teleconference participants. Enclosure B contains the NRC's follow-up questions and summarizes the responses provided by AmerGen during the teleconference. No staff decisions were made during the teleconference.

IRAI

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Letter to AmerGen Energy Company, LLC from Sarah Lopas dated September 8, 2008

SUBJECT: SUMMARY OF CONFERENCE CALL WITH AMERGEN ENERGY COMPANY, LLC, TO DISCUSS RESPONSES TO SEVERE ACCIDENT MITIGATION ALTERNATIVES REQUESTS FOR ADDITIONAL INFORMATION FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1 (TAC NO. MD7702)

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LIST OF PARTICIPANTS FOR CONFERENCE CALL
WITH AMERGEN ENERGY COMPANY, LLC,
TO DISCUSS RESPONSES TO SEVERE ACCIDENT MITIGATION
ALTERNATIVES REQUEST FOR ADDITIONAL INFORMATION
FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1

August 12, 2008

PARTICIPANTS

AFFILIATION

Sarah Lopas	U.S. Nuclear Regulatory Commission (NRC)
Steve Short	Pacific Northwest National Laboratory (PNNL)
Bruce Schmitt	PNNL
Christopher Wilson	Exelon Corporation (Exelon)
Nancy Ranek	Exelon
Greg Krueger	Exelon
David Honan	Exelon
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ENCLOSURE A

NRC FOLLOW-UP QUESTIONS AND SUMMARY OF AMERGEN RESPONSES

August 12, 2008

1. NRC Request for Additional Information (RAI) 6f, 6h, and 7: The environmental report (ER) identifies SAMAs 2, 7, 8, 11, 12, 15, 16, 19, 21, 23, 24, 26, 27, 32, and 33 as potentially cost-beneficial and that these 15 SAMAs will be considered for implementation through the established TMI-1 work management processes. The response to RAI 7 clarified that many of these SAMAs address the same risk contributors and identified a "minimal SAMA" set composed of SAMAs 2, 12, 15, 16, 26, 27, and 32. However, the ER analyses assumed that the existing borated water storage tank (BWST) manual refill makeup capability was adequate. A sensitivity case in the ER showed that SAMA 10 would also be cost-beneficial if BWST manual refill capability was inadequate. The response to RAI 6f further identified that the cost-benefit results for SAMAs 2, 11, 13, 16, 22, and 24 could be impacted if the analysis had assumed that BWST manual refill capability was inadequate. The RAI 6f response further identified SAMA 13 as being cost-beneficial if BWST manual refill capability was inadequate (SAMAs 2, 11, 16, and 24 were already cost-beneficial and so they were not re-analyzed with this assumption, while SAMA 22 was shown to still not be cost-beneficial for either the baseline or uncertainty analyses). Finally, the response to RAI 6h clarifies that the BWST refill capability issue has been entered in the TMI-1 Corrective Action Program and that SAMA 10, and an unevaluated option to enhance the existing manual makeup capability, will be considered when addressing this issue.

The NRC requests further clarification on AmerGen's plans for further evaluation or implementation of the original 15 cost-beneficial SAMAs and SAMAs 10 and 13, in light of the impact that the BWST refill capability assumption can have on the cost-benefit results.

AmerGen Response: *SAMAs 10 and 13 will be evaluated for implementation along with the original 15 SAMAs.*

2. NRC RAI 2a regarded MAAP source term calculations used to support the TMI-1 SAMA analysis. Please identify the version of the modular accident analysis program (MAAP) code used in the SAMA evaluation.

AmerGen Response: *PWR MAAP 4.0.5*

3. The NRC would like SECPOP corrected values for each of the elements that contribute to the Maximum Averted Cost-Risk for both internal events and external flooding events (see page E-42 of the TMI-1 ER). The contributing elements include: off-site exposure cost-risk (APE); off-site economic cost-risk (AOC); on-site exposure cost-risk (AOE); on-site cleanup cost-risk (ACC); and replacement power cost-risk (RPC).

AmerGen Response:

Maximum Averted Internal Events Cost-Risk

APE: \$972,461

AOC: \$1,939,164

AOE: \$14,670
ACC: \$461,912
RPC: \$125,917

Maximum External Flooding Cost-Risk

APE: \$5,289,732
AOC: \$9,321,762
AOE: \$50,177
ACC: \$1,579,915
RPC: \$430,685

4. Please clarify the response to RAI 3d, which asked for clarification regarding flood gate installation and the time available for operator response to a fast developing flood. Specifically, the NRC would like to know why only six flood gates are discussed in the AmerGen response. What is their relevance with respect to the other flood gates?

AmerGen Response: The response to RAI 3d focused on the “E” flood gates rather than the other critical flood gates in Table 1 of Section 5.2 of the Integrated Plant Examination – External Events (IPEEE) for the following reasons. Most flood gate installation at TMI is performed incrementally based on river flow forecast. For example, certain gates are directed to be installed beginning with a 36 hour forecast of 640,000 cubic feet per second (cfs) and others with a 36 hour forecast of 900,000 cfs. However, in the case of the six “E” (Intake Screen Pumphouse) flood gates and the single “B-2” (Control Building Doorway to BWST Tunnel) flood gate, installation is directed based on the river level rather than the river flow forecast. Specifically, installation of the “E” and “B-2” gates is directed when the river reaches 302’ mean sea level (msl). Because installation of the “E” and “B-2” gates is not directed until water level is nearing the point where water incursion is possible, rapid river level increases are more challenging to successful installation for these gates. Even so, note that while gate “B-2” must be in place before the water level reaches 305’ msl, compared with 308’ msl for the “E” flood gates, it is a single 3.5’x5.3’ gate that is stored locally. Hence, installation of the single “B-2” gate does not present the same challenge as installing the six “E” flood gates, which is why only the six “E” flood gates, and not also the “B-2” gate, were the focus of the response to RAI 3d.

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