



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

June 9, 2010

LICENSEE: Entergy Operations, Inc.

FACILITY: Waterford Steam Electric Station, Unit 3

SUBJECT: SUMMARY OF JUNE 1, 2010, FOLLOW-UP CONFERENCE CALL WITH ENTERGY OPERATIONS, INC., ON DRAFT RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION FOR GENERIC LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT PRESSURIZED-WATER REACTORS" (TAC NO. MC4729)

On June 1, 2010, a publicly noticed Category 1 Public Meeting (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101340061), was held via telephone conference call, between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Entergy Operations, Inc. (Entergy, the licensee). This was a follow-up call to the conference call on March 8, 2010, to discuss the open items for Waterford Steam Electric Station, Unit 3 (Waterford 3), from the request for additional information (RAI), dated September 22, 2009 (ADAMS Accession No. ML092510124), on NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors." By letter dated April 15, 2010 (ADAMS Accession No. ML101340625, Not Publicly Available), the licensee submitted a draft response.

Members of the public were not in attendance. A list of participants is provided in Enclosure 1. Enclosure 2 provides the status of the responses to the 44 questions in the licensee presentation.

Additionally, the following schedule was established for completion of the NRC staff requests:

- The licensee expects to provide revised draft responses for questions 18, 33, and 33a during the week of June 14, 2010.
- The licensee plans to provide a one-page summary of the baseline approach to questions 39 through 44 during the week of June 14, 2010.
- By the end of July 2010, the licensee plans to inform the NRC staff the approach taken to resolve the chemical effects and provide a plan for managing the chemical interaction if refinements are taken.

- The licensee tentatively plans to submit the final response to the RAI by November 15, 2010.

Please direct any inquiries to me at 301-415-1480 or [kaly.kalyanam@nrc.gov](mailto:kaly.kalyanam@nrc.gov).



N. Kaly Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures:

1. List of Participants
2. Status of Responses

cc w/encls: Distribution via Listserv

LIST OF PARTICIPANTS

JUNE 1, 2010, PUBLIC MEETING VIA CONFERENCE CALL WITH

ENERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

Entergy Operations, Inc.

Greg Ferguson  
Nick Petit

Alion

Megan Stachowiak  
Jim Furman

Nuclear Regulatory Commission

Michael Scott, NRR/DSS/SSIB  
Steven Smith, NRR/DSS/SSIB  
Roberto Torres, NRR/DSS/SSIB  
John Lehning, NRR/DSS/SSIB  
Matt Yoder, NRR/DCI/CSGB  
N. Kalyanam, NRR/DORL/LPL4

STATUS OF RESPONSES TO REQUEST FOR ADDITIONAL INFORMATION

ENTERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

Reference: Entergy Operations, Inc., to U.S. Nuclear Regulatory Commission (NRC), DRAFT letter W3F1-2010-0032, "Response to Request for Additional Information Regarding Final Supplemental Response to Generic Letter 2004-02, Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors (TAC No. MC4729)," dated April 15, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101340625, Not Publicly Available).

<b>RAI Question No. (*)</b>	<b>Comment</b>
1 through 10	The responses are acceptable to the NRC staff.
11	This response is acceptable to the NRC staff.
12 (**)	The licensee plans to demonstrate that plant-specific velocities around strainer plenum are similar to those tested. If sufficient, the NRC staff will treat this item as resolved.
13	The licensee plans to clarify/confirm that all the fibrous debris added to the test would be fines. With this information, the NRC staff will treat this item as resolved.
14 and 15	The responses are acceptable to the NRC staff.
16	The licensee will clarify/confirm that it assumed 100 percent transport of unqualified coatings to the strainer. With this information, this response is acceptable to the NRC staff.
17	This response is acceptable to the NRC staff.
18 (**)	The NRC staff stated that NUREG/CR-6916, "Hydraulic Transport of Coating Debris, a Subtask of GSI-191," December 2006 (ADAMS Accession No. ML070220061), does not address settlement of fine particulate. The licensee is considering this issue and may revise its response. The NRC staff also stated that Westinghouse Topical Report WCAP-16406-P-A, Revision 1, "Evaluation of Downstream Sump Debris Effects in Support of GSI-191," March 2008 (Not Publicly Available because it contains proprietary information), provides a basis for depletion of suspended particulates.
19, 20, and 21	The responses are acceptable to the NRC staff.

(\*) For the description of the Request for Additional Information (RAI) questions, please refer to the presentation slides entitled, "Waterford 3 Generic Letter 2004-02 Response to RAIs," dated March 8, 2010 (ADAMS Accession No. ML100690372).

(\*\*) Represents the items considered unresolved. These items will likely be the focus for a future discussion, unless the RAI responses contain details not discussed or unexpected information.

RAI Question No. (*)	Comment
22a, 22b, and 22c	The licensee plans to clarify/confirm that it used runout flows and minimum pool levels. If sufficient, this response would be acceptable to the NRC staff.
22d	This response is acceptable to the NRC staff.
23	Specifically for 23g and 23h, the licensee plans to clarify/confirm that sacrificial area for miscellaneous debris will be considered for determination of flow rates and debris amounts. If sufficient, this response will be acceptable to the NRC staff.
24, 25, and 26	The responses are acceptable to the NRC staff.
27	The licensee plans to confirm that the extrapolation of test data ensures all data points obtained during testing are bounded by the extrapolated curve. If sufficient, the NRC staff will consider this response will be acceptable.
28 through 32	The responses are acceptable to the NRC staff.
33 (**)	The NRC staff suggested that the licensee consider providing minimum containment pressure and saturation pressure at maximum sump temperatures to demonstrate sub-cooling margins. The licensee plans to evaluate this issue.
33a (**)	RAI Question No. 33a should be submitted to the NRC on the docket, since it was not in the original list. (Since the meeting, the NRC staff has docketed RAI Question No. 33a under ADAMS Accession No. ML101520476.) The staff suggested that the licensee refine the amount of gas at the pump suction based on updated head loss, use of ideal gas law compression, and credit for strainer submergence. This should demonstrate that the gas at the pump suction would have negligible effect. The licensee plans to evaluate this.
34	The response is acceptable to the NRC staff.
35 (**)	The licensee plans to revise its response by correcting the identified error and will provide the initial reactor coolant system volume. If sufficient, the NRC staff will consider the response to be acceptable.
36, 37	The responses are acceptable to the NRC staff.
38(**)	This item is expected to be addressed as part of the Pressurized-Water Reactor Owners Group generic resolution.
39-44 (**)	The NRC staff stated that the baseline approach of large-scale head loss test with full-load WCAP precipitates has been accepted in the past; however, the staff needs to review the plant-specific analysis. If the licensee chooses to use the Argonne National Laboratory solubility correlation or vertical loop, the staff would need additional information to validate the acceptability of the method. The licensee plans to provide a one-page summary of its baseline approach in 2 weeks (week of June 14, 2010) and the staff will provide feedback.

- The licensee tentatively plans to submit the final response to the RAI by November 15, 2010.

Please direct any inquiries to me at 301-415-1480 or [kaly.kalyanam@nrc.gov](mailto:kaly.kalyanam@nrc.gov).

/RA/

N. Kaly Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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RTorres, NRR/DSS/SSIB

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MYoder, NRR/DCI/CSGB

**ADAMS Accession Nos.** Meeting Notice ML101340061, Meeting Summary ML101530232,  
Licensee draft Response ML101340625

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