



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

July 29, 2010

LICENSEE: Omaha Public Power District

FACILITY: Fort Calhoun Station, Unit No. 1

SUBJECT: SUMMARY OF JUNE 30, 2010, CATEGORY 1 TELECONFERENCE WITH OMAHA PUBLIC POWER DISTRICT ON GENERIC LETTER 2004-02 (TAC NO. MC4686)

On June 30, 2010, a Category 1 public teleconference was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Omaha Public Power District (OPPD) at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the teleconference was to discuss with representatives of OPPD the NRC request for additional information (RAI) regarding Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," dated February 12, 2010, for Fort Calhoun Station, Unit No. 1 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100150072). A list of attendees is enclosed.

The licensee provided revised draft responses and the NRC staff discussed each proposed response in detail with the licensee and its contractor. The following summarizes the discussion of each proposed response:

- RAI 3 – The licensee plans to add band width in the table for the response for RAI 3 and plans to state that it is the same as the spacing in the Ontario Power Generation, Inc. (OPG) testing. The licensee stated that it plans to use 6.5-inch spacing to the extent practical given the configuration. With the above changes, the NRC staff concludes that the response to RAI 3 is acceptable. The licensee is expected to reflect the above in its final response.
- RAI 5 – The NRC staff suggested that the licensee identify the expected time needed to secure the low-pressure safety injection pump and provide a basis for the time chosen. The NRC staff noted that the response from Millstone Power Station, Units 2 and 3, dated March 13, 2009 (ADAMS Accession No. ML090750436), and the draft responses from Calvert Cliffs Nuclear Power Plant, Units 1 and 2, and Waterford Steam Electric Station, Unit 3, are examples that would be considered acceptable by the NRC staff. The licensee is expected to resubmit this draft response.
- RAI 7 – The licensee's draft response addressed the NRC staff's concerns and did not require additional discussion.
- RAI 10 – OPPD has not yet provided a draft response. The licensee provided talking points on its general approach. The NRC staff stated that the revised

computational fluid dynamics (CFD) calculation does not address the staff's concerns with settlement methodology. The NRC staff acknowledged, however, it would show more margin to the expected settlement threshold than did the previous calculation, thus reducing uncertainties. The NRC staff also noted that the licensee's method does not validate turbulent kinetic energy (TKE) metrics used by experiment. The licensee stated that an inactive compartment flow is so quiet that settling would occur. The NRC staff stated that baselining per the RAI would not be practical. Instead, even if the licensee added a very large safety factor into the metric being used, significant transport would still not be present.

The NRC staff stated that the licensee should discuss how much debris would initially be located in stagnant region and the sources of flow in that region.

A clear path forward is not apparent at this time. The NRC staff stated it will review the licensee's response when provided to make a determination.

- RAI 15 – The licensee's draft response addressed the NRC staff's concerns and did not require additional discussion.
- RAI 20 – OPPD has not yet provided a draft response. The licensee provided talking points on its general approach. The NRC staff expressed the desire for the licensee to demonstrate that its analysis is representative of the plant. In particular, the staff questioned the validity of the licensee's velocity argument because turbulence is an important factor in settling.

The NRC staff suggested that the licensee could either do a test flume CFD to demonstrate that the plant would be bounded adequately by the CFD for the test flume, or make its best written argument that the transport method is conservative even given uncertainties about settlement.

The NRC staff questioned the licensee's basis for concluding a break in the far compartment is limiting for near-field flow conditions around the strainer. The licensee will reassess its path forward and inform the staff.

- RAI 25 – The licensee's draft response addressed the NRC staff's concerns and did not require additional discussion.
- RAI 34 – The licensee's draft response addressed the NRC staff's concerns and did not require additional discussion.
- RAI 35 – The NRC staff concluded that the licensee's large-break loss-of-coolant accident (LOCA) approach is acceptable.

The NRC staff questioned the adequacy of the licensee's small-break LOCA analysis since the test contained 2.7 kilograms (Kg) aluminum oxyhydroxide (AlOOH) and the AlOOH predicted is 30.6 Kg. The licensee stated that it would reevaluate the small-break LOCA analysis.

The NRC staff questioned the adequacy of the licensee's argument why additional precipitate would not significantly affect test results. The licensee stated it would reevaluate its response. The NRC staff questioned the basis for the licensee's argument that small quantities of precipitate are negligible in the presence of the filtering bed. The licensee stated it would reevaluate this matter.

The NRC staff noted that the use of the Argonne National Laboratory solubility equation assumes a pH of 7.5. The licensee stated that minimum pH could be 7.0, though unlikely to be less than 7.0. The licensee will either show that pH is greater than 7.5 or will re-evaluate solubility.

The licensee is expected to resubmit its draft response.

- RAI 37 – The licensee's draft response addressed the NRC staff's concerns with regard to a 15 percent assumption. The licensee agreed to add a description of the debris collection method used (i.e., masolin cloth).
- RAIs 39-47 – The NRC staff noted that many of its concerns could be alleviated if the following actions were considered:
 - The licensee uses reflective metallic insulation (RMI), or
 - The licensee uses Surehold™ bands in a manner consistent with a soon-to-be issued revised safety evaluation on Nuclear Energy Institute (NEI)-04-07. NRC staff guidance on Surehold™ bands is expected to accompany the safety evaluation revision.
- Additional discussions – The NRC staff stated that the licensee needs to discuss the reason that increases in debris assumed to be generated and transported do not cause an issue of validity of testing already performed.

The licensee stated that for small-break LOCAs, increase in washdown assumed and latent fiber will be more than the compensated by removal of Nukon on the pressurizer spray line, since the licensee intends to replace that with RMI.

For large-break LOCAs, the licensee stated that a series of tests showed reduced head loss as fiber amounts were increased. Tests did not include chemicals, but the limiting large-break case included chemicals. The NRC staff acknowledged this argument may be reasonable as long as amounts added are relatively small. The licensee plans to describe the difference in amounts of debris based on the changed assumptions.

Following the discussion of the above RAIs, the NRC staff and licensee agreed that additional telephone calls and/or a meeting(s) are needed to resolve the remaining issues. The telephone calls and meetings will be noticed to the public. Also, the licensee plans to resubmit the draft responses to RAIs 5, 10, 20, and 35 based on feedback during the discussion. The licensee informed the staff subsequently that it would submit these revised responses by October 1, 2010.

The meeting notice is available under ADAMS Accession No. ML101620506. The public was invited to listen in on the teleconference and was given the opportunity to communicate with the NRC after the business portion, but before the meeting was adjourned. No members of the public were present. No Public Meeting Feedback forms were received.

Please direct any inquiries to me at 301-415-1377, or Lynnea.Wilkins@nrc.gov.

A handwritten signature in black ink, appearing to read 'Lynnea Wilkins', written over a horizontal line.

Lynnea Wilkins, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosure:
List of Attendees

cc w/encl: Distribution via Listserv

LIST OF ATTENDEES

U.S. NUCLEAR REGULATION COMMISSION

CATEGORY 1 PUBLIC TELECONFERENCE ON JUNE 30, 2010

WITH REPRESENTATIVES OF OMAHA PUBLIC POWER DISTRICT (OPPD)

ON GENERIC LETTER 2004-02

Name	Organization
Bill Hansher	OPPD
Donna Lippy	OPPD
Dr. Joe Gasper	OPPD
Janice Bostelman	Alion Science & Technology, Inc.
Todd Anselmi	Alion Science & Technology, Inc.
Jim Furmann	Alion Science & Technology, Inc.
Andy Roudenko	Alion Science & Technology, Inc. (CA)
Joseph Tezak	Alion Science & Technology, Inc. (NM)
Tim Sande	Alion Science & Technology, Inc. (NM)
Michael Scott	NRC
John Lehning	NRC
Stephen Smith	NRC
Lynnea Wilkins	NRC

Enclosure

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/ra/

Lynnea Wilkins, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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ADAMS Accession Nos. Meeting Notice ML101620506, Meeting Summary ML101940301

OFFICE	DORL/LPL4/PM	DORL/LPL4/LA	DSS/SSIB/BC	DORL/LPL4/BC	DORL/LPL4/PM
NAME	LWilkins	JBurkhardt	MScott	MMarkley	LWilkins
DATE	7/21/10	7/21/10	7/28/10	7/29/10	7/29/10

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