



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

June 11, 2010

LICENSEE: ENTERGY NUCLEAR OPERATIONS, INC.

FACILITY: PALISADES NUCLEAR PLANT

SUBJECT: SUMMARY OF MAY 12 AND 13, 2010, MEETING WITH ENTERGY NUCLEAR OPERATIONS, INC., REGARDING RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR GENERIC LETTER 2004-02 FOR PALISADES NUCLEAR PLANT (TAC NO. MC4701)

On May 12 and 13, 2010, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Entergy Nuclear Operations, Inc. (ENO), at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss licensee response to NRC Staff's request for additional information regarding review of Generic Letter 2004-02 for Palisades Nuclear Plant. A list of attendees is provided as an Enclosure.

Prior to the meeting, the licensee had provided their draft response to NRC staff's request for additional information (RAI), which was entered into Agencywide Documents Access and Management System, see Accession No. ML101300225. The licensee response to NRC staff RAIs was discussed during the meeting.

The following is the summary of discussion of each proposed RAI response:

1. Staff finds this response acceptable as is.
- 2-9. Staff finds the response acceptable in concept. Licensee should state it will redo debris generation calculations and retest. Timeline unknown and dependent on resolution of generic questions regarding Performance Contracting, Inc. (PCI) "settlement credit" protocol.
10. a. Staff finds this response acceptable as is.
b. Staff agrees with argument about nontransportability of Marinite and Transite. Staff agrees that Transite would not erode. Licensee will add information from response to RAI 14.C. Licensee could provide revised response to show that the amount of fine CalSil that will be tested has sufficient margin to bound Marinite erosion.
11. Licensee should replace data in Table 3.1 and 3.4.3 with current data, found elsewhere in the response package. Licensee should add that Table 3.2 applies to mineral wool as well.
12. Licensee will establish a basis for the size to the extent feasible using the WCAP-16727. Licensee will also run a transport test using Palisades flow rate. Licensee will make a case that the amount of material involved is insignificant. If transport tests show

this material to be transportable, licensee would add appropriate material to flume test. Since there are no defined zones of influence for this material, if it transports, this issue would need additional discussion with staff.

13. The staff finds Table 3.2 to be acceptable. The staff safety evaluation on NEI 04-07 does not accept plant-specific use of Appendix VI, Table VI-2. Licensee will consider whether to attempt to defend Appendix VI. Further discussion needed.
14. a. Staff finds this response acceptable as is.
 - b. To attempt to justify the proposed size distribution, licensee plans to either do a stress calculation or reduce banding spacing to the equivalent of that in the Ontario Power Generation testing. Licensee will also clarify the material of construction for the bands as part of its licensing basis.
 - c. Staff will find this item acceptable if items a. and b. are resolved.
15. Licensee should attempt to demonstrate that overall conservatism in the amount of fiber bounds uncertainties with fiber erosion on the 608 foot (ft) plant elevation.

Possible approaches include:

- Adding fines to account for erosion (the licensee is already planning to do this in submittal).
- 10 percent is conservative erosion for large pieces.
- Erosion test conditions are worse as compared to plant conditions in the pool as a whole.
- Licensee could run head loss test using small pieces that have not been shaken.
- Licensee could do computational fluid dynamics (CFD) to show flows on the 608 ft level are similar to tested flows.
- If thin bed ends up limiting, the amount of fiber from the 608 ft level may not matter.
- Licensee should strengthen its argument regarding locations of large pieces and show its assumptions to be conservative.

Staff agrees that the licensee has shown that resolution of this issue for A loop will resolve it for the B loop, based on information provided in the draft response.

16. Staff accepts that large pieces being assumed to erode would address items 16.a and 16.b as regards large pieces. Staff stated that resolution of RAI 17 with margin to account for floatation would resolve RAI 16. Licensee will consider path forward.
17. If RAI 15 is resolved, Table 17.1 is acceptable to the staff except for the assumption of 10 percent for jacketed mineral wool. Staff does not view evidence for erosion behavior of mineral wool as adequately justified by the limited test results provided, including extrapolation of test results.
 - a. This response acceptable as is.
 - b. The status for this item is the same as that for item 17 above.

- c. Licensee plans to add eroded fines with initial fines unless the NRC accepts the PCI attempt to generically justify the previous approach. Similarly, the licensee will add eroded fines to cover smalls entered into the flume unless the NRC accepts the PCI justification for its previous approach.
18. This response is acceptable as is.
 19. Licensee will provide overall percentage of various debris that is predicted to reach the strainer as a fraction of total generated. Licensee will provide percentage applicable to the planned retesting.
 20. This item will be acceptable if licensee continues the testing protocol as described in last paragraph of the response. Licensee could also test S5 and S6 separately.
 21. Licensee stated that future testing will not add debris to the end of flume only, with method to be discussed at an upcoming meeting between NRC and PCI.
 22. Licensee plans to provide justification for how water falling from above is treated on entering the pool. PCI will provide a generic physical argument in June. Licensee plans to provide CFD results for the new flume test. Licensee will provide additional justification on why S5 is limiting.
 23. Staff does not accept licensee's argument. Licensee plans to provide new method being developed by PCI/Alden team and will provide example application at PCI meeting in June 2010.
 24. Staff does not accept the argument for head loss "margin," nor the conclusion that margin is a viable approach to handling transport differences of high versus low flow. The licensee plans to reconsider its path forward.

Staff suggested that for the thin bed test, licensee could add particulate first and then batch in an amount of fiber predicted to transport at the higher flow, and then reduce the flow and add in remaining fiber. Staff stated that, for the full-load test, there could be concern for order of addition if less transportable material was added before more transportable.

Staff also stated that another approach that might work would be to run two tests – with and without low-pressure safety injection pump failure to trip. The test considering the failure to trip would consider time-dependent arrival of particulate and fiber. Staff noted that this approach would likely require substantial additional discussion.

25. Licensee should calculate the amount of deaeration that could occur and use Regulatory Guide 1.82 to calculate the effect on net positive suction head required. The licensee should do this for new testing. Otherwise this response is acceptable.
26. a. Licensee will follow whatever approach is agreed to between NRC and PCI.
 - b. Acceptable after licensee removes first sentence in first unnumbered paragraph on page 105. Licensee will replace with statement that strainer submergence is greater than head loss or the strainer vent is uncovered. Either condition would prevent flashing.
27. f. This response is acceptable as is, and it renders 27.a. through e. moot.

28. Licensee will follow whatever approach is agreed to between NRC and PCI.
29. This response is acceptable as is.
30. This response is acceptable as is.
31. Licensee can credit solid objects, the solid part of porous media, and leak-tight objects. For buffer volume, licensee should use solid density. Licensee stated that it will be consistent with staff's views expressed for this item.
32. This response is acceptable as is.
33. Licensee should state a clear conclusion that this material will not cause downstream effects, both in-vessel and ex-vessel effects.

The NRC staff stated that a public meeting may be required in the future to follow up on remaining open items, and submittal of revised draft RAI response to follow resolution of staff issues with PCI testing will be needed (date to be determined).

The staff stated that the licensee may provide two revised draft responses (date to be determined):

- Those not impacted by PCI testing
- Those impacted by PCI testing

Members of the public were not in attendance. Public Meeting Feedback forms were not received.

Please direct any inquiries to me at 301-415-8371, or Mahesh.chawla@nrc.gov.



Mahesh Chawla, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosure: List of Attendees

cc w/encl: Distribution via Listserv

LIST OF ATTENDEES

MAY 12 & 13, 2010, MEETING WITH ENO

RESPONSE TO GENERIC LETTER 2004-02

FOR PALISADES NUCLEAR PLANT

Name	Organization/Title	May 12	May 13
Mahesh Chawla	NRC/NRR/DORL	-	X
Thomas Wengert	NRC/NRR/DORL	X	-
Stuart Cain	Alden Research Laboratory, Inc.	X	-
Ludwig Haber	Alden Research Laboratory, Inc.	X	-
Chris Kudla	Performance Contracting, Inc.	X	-
Nathan Mar	Alion Science and Technology	X	-
Tim Sande	Alion Science and Technology	X	X
Jay Basken	Enercon	X	X
Neil Lane	Entergy Palisades	X	X
Keith Smith	Entergy Palisades	X	X
Matthew Plante	Areva	X	-
Paul Klein	NRC/NRR/DCI	X	X
Ervin Geiger	NRC/NRR/DSS	X	-
Roberto Torres	NRC/NRR/DSS	X	-
Steve Smith	NRC/NRR/DSS	X	X
John Lehning	NRC/NRR/DSS	X	X
Michael Scott	NRC/NRR/DSS	X	X
Bill Ruland	NRC/NRR/DSS	X	-

Enclosure

Name	Organization/Title	May 12	May 13
George Goralski	Entergy Palisades	X	X
Brian Kemp	Entergy Palisades	X	-
Paula Anderson	Entergy Palisades	X	X
Matt Yoder	NRC/NRR/DCI	-	X
William J Beckius	BP&R Engineering, Inc	XX	XX
Steven J Mongeau	Entergy Palisades	-	XX
Jeffrey L Voskuil	Entergy Palisades	-	XX

_ Not Present X Present XX Via Teleconference

- 28. Licensee will follow whatever approach is agreed to between NRC and PCI.
- 29. This response is acceptable as is.
- 30. This response is acceptable as is.
- 31. Licensee can credit solid objects, the solid part of porous media, and leak-tight objects. For buffer volume, licensee should use solid density. Licensee stated that it will be consistent with staff's views expressed for this item.
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Mahesh Chawla, Project Manager /RA/
 Plant Licensing Branch III-1
 Division of Operating Reactor Licensing
 Office of Nuclear Reactor Regulation

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RidsNrrLABTully Resource		EGeiger, NRR		

ADAMS Accession Nos.: Meeting Notice ML101160493 Meeting Summary: ML101590527

OFFICE	DORL/LPL3-1/PM	DORL/LPL3-1/LA	DSS/SSIB/BC	DORL/LPL3-1/BC	DORL/LPL3-1/PM
NAME	MChawla	BTully	MScott	RPascarelli	MChawla
DATE	06/10 /10	06/10 /10	06/10/10	06/11/10	06/11/10

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