

October 1, 2014

MEMORANDUM TO: Anthony J. Mendiola, Chief
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

FROM: Joseph Holonich, Project Manager */RA/*
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SUBJECT: SUMMARY OF AUGUST 19, 2014 MEETING ON GAS VOIDS

On August 19, 2014, staff from the U.S. Nuclear Regulatory Commission (NRC) met with industry representatives. The purpose of the meeting was to discuss gas void issues at nuclear power plants. The meeting was closed because the information discussed was proprietary. Meeting presentations and attendees can be found in the Agencywide Document Access and Management System (ADAMS) package for the meeting (ADAMS Accession No.: ML14236A050).

Topics discussed covered:

1. NRC staff response to July 21, 2014 industry comments regarding guidance that the staff is developing. A copy of the guidance was sent to the Nuclear Energy Institute (NEI) on May 27, 2014. Until a determination is made on whether the guidance is proprietary, it will not be placed in ADAMS.
2. The Purdue gas movement correlations that are being used by several licensees and potential changes in the NRC approach from what was discussed in the NRC Safety Evaluation that covered NEI 09-10, Revision 1a-A, "Guidelines for Effective Prevention and Management of System Gas Accumulation," (ADAMS Accession No.: ML13136A129). This included (a) the use of a safety factor to account for the large uncertainty in both the correlation fit to the Purdue data and in the data with consideration of the conservatism in the acceptable pump void criteria and (b) determination of the downcomer length required to reasonably ensure homogeneous bubbly flow out of the downcomer.
3. The planned NRC approach to updating guidance documents with respect to gas management issues. Several possible paths forward were identified including but not limited to publishing a NUREG, a Regulatory Guide, and a Task Interface Agreement.

4. Discussion of the differences between the approach to current design-basis requirements and reasonable assurance of operability. One item discussed was the response to gas accumulation at piping high points during operation when the design basis is a water-solid condition.
5. Other topics discussed during the meeting.

Industry representatives indicated that they did not understand the relationship of the guidance document being developed by the NRC to NEI 09-10 Rev. 1a-A and Technical Specification Task Force Traveler (TSTF) 523. NRC staff noted that NEI 09-10 Rev1a-A provides excellent coverage and guidance with respect to operability concerns related to gas management. However, the new document will be more focused on design-basis aspects of gas management in addition to the operability aspects of topics not covered in NEI 09-10 Rev. 1a-A including vortexing and computer code use. Additionally, as noted in Item 3 above there are several options moving forward, including but not limited to publishing a NUREG, a Regulatory Guide, or a Task Interface Agreement. NRC staff took an action to re-group and decide on the correct path(s) forward.

Both industry representatives and NRC staff agreed that the pump suction criteria in Tables 1 and 2 of NEI 09-10 Rev 1a-A are quite conservative and that for operability determinations there might be room for relaxation of the criteria in Tables 1 and 2 contained in the pump roadmap project or pump-vendor information.

The difficulty in determining if bubbly flow exists was discussed. Industry representatives and NRC staff agreed that using a factor of less than four times the gas volume that was upstream of the downcomer to determine if there is bubbly flow may be justified.

Action Items

- Industry will provide NRC staff input on a staff confirmatory calculation of the NEI 09-10, Rev 1a-A Purdue correlation.
- Industry will look into data sharing of various tests and benchmarks.
- NRC staff to discuss and decide the correct path(s) forward for updated gas management guidance.

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