Gas Accumulation Management in Response to Generic Letter 2008-01

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Discussion Topics

- History
- GL Response Review Process
- Status and Anticipated Activities

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History

- Problems due to gas in plant systems have occurred since the first nuclear power plants were started.
- The seriousness of the issue was not broadly appreciated until GL 2008-01 was issued although numerous previous communications attempted to address the issue.

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History - Continued

- GL 2008-01 differed from previous documents by providing comprehensive coverage of the technical issues.
- NEI and some industry representatives provided in-depth activities to address the issue while the GL was being formulated.
- Industry support has continually increased and significant improvements have been achieved

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Recent History

- 1997 - Oconee loss of all high pressure injection capability illustrated potential seriousness of issue
- NRC started to prepare a GL
- Industry response initiated following INPO initiative
- NRC stopped GL effort in belief that industry response would correct issues
- Initiative and response found to be too narrow and ineffective
- NRC staff assessed conditions via plant examinations and identified many weaknesses

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Recent History - Continued

- 2006 - NRC staff initiated GL preparation and initiated industry contacts. Industry/NRC coordination continues with beneficial results.
- 05/07 - NRC issued draft GL for comment.
- 01/08 - NRC addressed all comments, issued GL.
- 03/08 - NEI issued first of many guidance documents.

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Recent History - Continued

- 10/08 - NRC resolved meaning of “full of water”.
- 10/08 - Licensees submitted GL responses.
- 12/08 - NRC completed overview assessment of GL responses, initiated in-depth reviews.
- 03/09 - NRC issued operability criteria .
- 05/09 - Industry issued operability guidance.

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Recent History - Continued

- 05/09 - NRC identified issues that need to be addressed and provided closure plan
- 06/09 - NRC reviewer completed first Request for Additional Information (RAI)
- 07/09 - NRC issued Temporary Instruction (TI)
- 10/09 - NEI issued gas management NEI 09-10 guidelines.
- 12/09 - Industry completed gas transport testing.

GL Response Review Process

- Preliminary assessment of all initial GL responses
- Review each response using prepared generic review guidance
- Transmit RAIs as needed
- Perform in-depth review of each licensee's responses
- Transmit inspection suggestions to Regions for each licensee

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GL Response Review Process - Continued

- Provide closure letter to individual licensees when review is complete.
- SRXB personnel provide support to Regions during TI inspections when requested
- SRXB personnel participate in selected TI inspections when requested
- Provide GL closure communication when all individual licensee closure letters have been issued.

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GL Response Review Process - Continued

- After closure, SRXB to continue to provide support to Regional TI inspections.
- SRXB to review TI inspection reports and assess need for additional generic action
- SRXB to provide overall assessment report when majority of TI inspections have been completed.

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Status and Anticipated Activities

- Generic responses from 14 plants under review
- 73 plants reviewed through RAI stage
- RAIs responses received for 45 plants
- 23 closure memos transmitted to NRC Project Managers by SRXB

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Status and Anticipated Activities - Void Acceptance Criteria

- NRC Staff Criteria for Gas Movement in Suction Lines and Pump Response, ML090900136, 03/26/09 being revised
- Revision is based on judgment and available information
- Needed to support today's operations and inspections
- Needed to address one of the most serious weaknesses in licensee responses to the GL
- More consistent with 01/06/10 industry information.
- Will consider anticipated new information as confirmatory

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Status and Anticipated Activities – New Data and Information

- Purdue test data report anticipated in mid-2010. Will be assessed with respect to confirmation of void acceptance criteria.
- Completion of industry assessment of response of pumps to voids under both steady state and transient conditions expected in 2010. Will be assessed with respect to coverage of plant pumps and need for additional pump data.
- "Simplified Equation" expected to be finalized by June, 2010. Present approach likely acceptable to NRC staff on interim basis due to need.

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Status and Anticipated Activities – Analysis methodologies

- Many licensees failed to acceptably address how void volumes are determined in GL responses.
- To be addressed during TI inspections using new NRC acceptance criteria.
- If not consistent with NRC criteria, then operability determinations must be based on analysis methodology that is established to be acceptable via comparison to data consistent with plant-specific geometry or via obviously conservative methodology.
- If above not established for operating procedures, then the criterion must be “no void.”

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Status and Anticipated Activities – Industry Guidance and NEI 09-10

- NEI 09-10 provides excellent information and we reference it in guidance to Regions for conduct of TI inspections
- Does not provide comprehensive coverage of void acceptance criteria and related gas transport methodology.
- Revision expected by 06-10 to include attachment providing updated test data and findings

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Status and Anticipated Activities - Training

- We have received one training module that provides excellent coverage.
- We expect to see at least 3 more modules.
- TI inspections will likely cover training unless, as Regional option, licensee has acceptably addressed training in the GL responses.

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Status and Anticipated Activities - TSTF

- We are waiting for industry to provide its background and rationale for the TSTF recommendations discussed in the date?? meeting.
- When received, we will propose an approach that will be acceptable to the NRC staff.
- We expect each licensee to assess the final TSTF for application to its plant within an acceptable time and to provide an acceptable TS amendment request if needed.