


NEI 09-10 Rev 1

Guidelines for effective prevention and management of system gas accumulation


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Big Picture

- Developed as a result of the industry learning during response to GL 2008-01
- Provides one overall philosophy on how to resolve this issue that must be adapted to fit each station/utility
- Expands the scope beyond those systems specifically addressed in GL 2008-01




Purpose

"...aid in the identification of susceptible systems, outline principles and practices designed to effectively prevent, identify, manage and monitor accumulation of gas that would challenge the capability of a system to satisfy its design function requirement(s), and identify training to ensure that plant personnel can readily recognize and effectively respond to gas intrusion and accumulation in susceptible systems."




Foundation Principles

- FIRST : "It is expected that systems will be designed, operated and maintained in a manner to **prevent** accumulation of gas."
- SECOND : "Where accumulated gas **cannot be reasonably prevented**, engineering technical evaluations must account for the presence of such gas and its impact on system performance."



Principles & Practices

- Strong Ownership sitewide
- Understanding and Identification of Site Specific Gas Intrusion Mechanisms
- Internalizing and implementing gas intrusion and accumulation prevention methodologies
- Critical review of both internal and external Operating Experience
- Design Process reviews to avoid adding gas intrusion mechanisms or new trap locations



Principles & Practices

- Dealing with repeat gas void locations
- Design Modification Solutions
- Develop and understand gas void precursors
- Identification and Evaluation of Potential Void Locations
- Procedures
 - Static & Dynamic Venting
 - Vacuum Fill
 - Includes verification (UT or other)

Principles & Practices

- Engineering review of fill, vent and verification plan
 - By work document
 - By procedure
 - Where will gas go during the dynamic venting
- Periodic Monitoring
 - Flexible based on established criteria
- Additional Monitoring
- Gas Volume Quantification

Principles & Practices

- Trending of Gas
 - All monitored points
 - Evaluated on a regular basis
 - Input to periodic monitoring frequency
- Monitoring Gas intrusion precursors
 - Procedural
 - Corrective Action
- Use of the Corrective Action Process
- Operability Limits Developed
 - Suction Side
 - Discharge Side

Revision 1

- Incorporate recent Industry work on gas transport
- Incorporate Industry/NRC acceptance criteria into a single location
- Incorporate Industry and NRC feedback to clarify document intent
