

Millstone Power Station Unit 3

Pre-Submittal Teleconference

for License Amendment Request to

Extend Containment Leakage

Testing Intervals

Agenda

- Background and Reason for Amendment
- Proposed Changes
- Technical Justification for Changes
- Conclusions
- Schedule
- Acronyms

Background

- 10 CFR 50, Appendix J was amended after the initial licensing of MPS3 to provide a performance-based approach (Option B) for the containment leakage testing requirements ILRT (Type A) and local leak rate testing.
 - Performance-based test intervals are based on consideration of the operating history of the component and resulting risk from its failure.
- NEI Topical Report 94-01 provided a guideline to the industry for implementing the performance-based Option B.
 - NRC's SEs for NEI 94-01 Revision 2-A and 3-A concluded that Licensees could implement this optional approach as described in the documents, subject to the limitations and conditions of the SEs.

Proposed Changes

- DENC proposes a LAR for MPS3, which will revise TS 6.8.4.f, "Containment Leakage Rate Testing Program" to:
 - Replace the reference to RG 1.163 with a reference to NEI 94-01, Revision 3-A.
 - Include additional wording to impose the limitations and conditions specified in NEI 94-01, Revision 2-A.
- These changes would allow DENC to extend the Type A (ILRT) interval from 10 years to 15 years and the Type C local leak rate test interval from 60 months to 75 months for MPS3.

Technical Justification for Changes

Testing History and Inspections

- A review of the last 3 Containment Leak Rate Test program results indicate that measured leak rates meet the applicable TS limits and/or Appendix J criterion with margin.
 - Only exception was during the 1998 as-found Type A test, when failures resulted from a containment purge supply issue (LER 96-012-00)
- Containment inspections performed in accordance with other plant programs serve to provide a high degree of assurance that the containment will not degrade in a manner that would challenge containment integrity.
 - Based on the latest ASME XI Subsection IWE/IWL containment inspections performed at MPS3, there are no active degradation mechanisms present.

Technical Justification for Changes

MPS3 PRA Background

- DENC prepared a confirmatory risk impact assessment in accordance with the methodology described in EPRI Report No. 1009325, Revision 2 for ILRT Extensions.
- The assessment confirmed the general findings of NUREG-1493 (Performance-Based Containment Leak-Test Program) on a plant specific basis, considering severe accidents for MPS3.
 - Increasing the ILRT interval to fifteen years is considered to be an insignificant change in risk since it represents a small change to the MPS3 risk profile.

Technical Justification for Changes

MPS3 PRA Scope

- The scope of the MPS3 PRA model includes Internal Event and Internal Flood Hazards.
- In this LAR, Fire and Seismic Hazards will be assessed using a bounding analysis, considering IPEEE information.
- Other External Hazards will be assessed qualitatively.

Technical Justification for Changes

MPS3 PRA Quality

- In the SE (ADAMS Accession No. ML081140105) for EPRI Report 1009325 and NEI 94-01 Revision 2 the NRC stated, in part:

“...the NRC staff will expect the licensee’s supporting Level 1/LERF PRA to address the technical adequacy requirements of RG 1.200, Revision 1. Capability category I of ASME RA-Sa-2003 shall be applied as the standard, since approximate values of CDF and LERF and their distribution among release categories are sufficient for use in the EPRI methodology.”

Technical Justification for Changes

MPS3 PRA Quality

- DENC recently contracted with Westinghouse to perform a focused-scope peer review of the MPS3 PRA to determine compliance with Addendum A of the ASME/ANS PRA Standard and RG 1.200, Revision 2.
- This review, when combined with a previous focused scope peer review, resulted in a complete review of the MPS3 Internal Event and Internal Flood PRA model against the full scope of ASME/ANS RA-Sa-2009/RG 1.200 R2 technical requirements.

Technical Justification for Changes

MPS3 PRA Quality

- The MPS3 PRA model has 106 F&Os of “Finding” significance.
 - All findings have been assessed and dispositioned for this application.
 - The LAR includes a table which discusses the disposition for each finding. The table uses a template from 10 CFR 50.69 risk-informed categorization license amendments.

Technical Justification for Changes

MPS3 PRA Quality

- Each finding was dispositioned using one of the following techniques:
 - Qualitative assessment
 - Incorporation into a quantitative sensitivity analysis which assessed the cumulative impact of PRA findings, uncertainties and pending changes

Technical Justification for Changes

- The PRA model (including 106 findings) is acceptable for ILRT surveillance application with the following basis:
 - The ILRT risk assessment methodology employs a number of simplifying assumptions which apply conservative bias to the evaluation. Per the NRC SE for EPRI Report 1009325:
“...approximate values of CDF and LERF and their distribution among release categories are sufficient for use in the EPRI methodology.”
 - The subject of the findings do not adversely impact the ability of the MPS3 model to support this application. Per the Westinghouse Peer Review Report:
“The findings and suggestions primarily pertain to modeling details and to the clarity and completeness of documentation. Overall, the MPS3 PRA was found to substantially meet the ASME/ANS PRA Standard, RA-Sa-2009 at Capability Category II”
 - The sensitivity analysis demonstrates that the ILRT risk analysis has very low sensitivity to the cumulative impact of Peer Review findings.

Conclusions

- DENC is adopting the guidance of NEI 94-01, Revision 3-A, and the limitations and conditions specified in NEI 94-01, Rev. 2-A, for use in the MPS3 10 CFR 50, Appendix J testing program.
- Based on the previous ILRT tests conducted at MPS3, DENC concludes that extension of the containment Type A (ILRT) interval from 10 to 15 years and the Type C local leak rate test from 60 months to 75 months represent minimal risks to increased leakage.
- The findings of the MPS3 risk assessment confirm, on a plant-specific basis, that extending the Type A (ILRT) interval from 10 to 15 years results in a small change to the MPS3 risk profile.

Schedule

- NRC Pre-Submittal Meeting on 06/03/2019
- Site Facility Safety Review Committee Review targeted for end of June 2019
- LAR Submittal to the NRC expected by end of July 2019
- NRC Approval requested by end of July 2020

Acronyms

ANS	American Nuclear Society	LERF	Large Early Release Frequency
ASME	American Society of Mechanical Engineers	MPS3	Millstone Power Station Unit 3
CDF	Core Damage Frequency	NEI	Nuclear Energy Institute
CFR	Code of Federal Regulations	NRC	Nuclear Regulatory Commission
DENC	Dominion Energy Nuclear Connecticut	PRA	Probabilistic Risk Assessment
EPRI	Electric Power Research Institute	RG	Regulatory Guide
F&O	Finding & Observation	SE	Safety Evaluation
IPEEE	Individual Plant Examination of External Events	TS	Technical Specifications
ILRT	Integrated Leak Rate Testing		
LAR	Licensing Amendment Request		