

5928-07-20117  
May 22, 2007

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Three Mile Island, Unit 1  
Facility Operating License No. DPR-50  
NRC Docket No. 50-289

**Subject:** Response to Request for Additional Information Concerning Technical Specifications Change Request No. 334 - One-Time Type A Test Interval Extension

- References:**
- 1) Letter from P. B. Cowan (AmerGen Energy Company, LLC) to U. S. Nuclear Regulatory Commission, dated September 15, 2006
  - 2) Letter from P. B. Cowan (AmerGen Energy Company, LLC) to U. S. Nuclear Regulatory Commission, dated February 26, 2007

In the Reference 1 letter, AmerGen Energy Company, LLC (AmerGen) requested an amendment to Appendix A, Technical Specifications, of Facility Operating License No. DPR-50. The proposed change modifies Technical Specifications (TS) 6.8.5, "Reactor Building Leakage Rate Testing Program." Specifically, the proposed change will revise TS 6.8.5 to reflect a one-time extension to the Three Mile Island, Unit 1 Type A Integrated Leak Rate Test (ILRT) interval as currently specified in the Technical Specifications. In the Reference 2 letter AmerGen provided additional information.

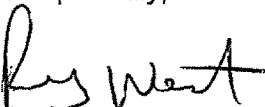
In a conference call on May 10, 2007, the U. S. Nuclear Regulatory Commission staff requested additional information. Attached is our response to that request.

This additional information is bounded by the Reference 1 No Significant Hazards Consideration. There are no commitments contained in this letter.

If any additional information is needed, please contact Tom Loomis at (610) 765-5510.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 22<sup>nd</sup> day of May, 2007.

Respectfully,



Russell G. West  
Vice President – TMI, Unit 1

Response to Request for Additional Information  
Concerning One-Time Type A Test Interval Extension  
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cc: R. R. Janati, Commonwealth of Pennsylvania  
S. J. Collins, Administrator, Region 1, USNRC  
D. M. Kern, USNRC Senior Resident Inspector  
P. Bamford, Project Manager, USNRC  
File No. 06050

**Response to Request for Additional Information Concerning Technical Specifications  
Change Request No. 334 - One-Time Type A Test Interval Extension**

Question:

"The leakage rate testing requirements of 10 CFR 50 Appendix J Option B and the inservice inspection (ISI) requirements mandated by 10 CFR 50.55a complement each other in ensuring the leak-tight integrity and the structural integrity of the containment during its service life. TMI-1 has scheduled replacement of steam generators (SG) during the T1R18 outage (Fall 2009) which will require the containment liner and post-tensioned concrete structure to be breached. In the license amendment request, TMI-1 proposes to perform its next periodic ILRT in combination with the post-repair containment pressure test required per ASME Code Section XI IWL-5000 to ensure structural integrity of the restored containment following the major repair/replacement activity. For the TMI-1 containment, leak-tight integrity is provided by the metallic liner and structural integrity is provided by the post-tensioned concrete structure. Further, containment structural integrity is essential to ensuring its leak-tight integrity. Since the post-repair containment pressure (integrity) test and the next periodic ILRT are proposed to be performed in combination during the T1R18 outage, please outline the main characteristics of the pressurization process and the extended surface examinations, additional examinations during pressurization, other examinations, and measurements of structural response to pressure of the affected areas/components of the post-repair containment structure, required by IWL-5250, that you plan to conduct during the combined test. How will these examinations and the ILRT itself be relatively scheduled/sequenced during the combined test?"

Response:

TMI proposes to conduct an integrated leakage rate test and an ASME Section XI, Subsection IWL system pressure test at the end of the steam generator replacement outage currently scheduled for late 2009. The tests will be performed concurrently following the completion of containment restoration work. The following paragraphs summarize the bases, pressurization sequence and planned activities associated with both tests:

- The system pressure test will follow requirements of ASME Section XI, Subsection IWL, Article IWL-5000.
- The integrated leakage rate test (ILRT) will meet the requirements of Appendix J, Option B and the industry standards referenced in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program", September 1995.
- Required tests will be conducted concurrently at  $P_a = 50.6$  psig, plus a small margin to ensure that ASME Section XI examinations required at  $P_a$  are completed while pressure is at or above this level. In accordance with ANSI 56.8-1994 ("Containment System Leakage Testing Requirements") pressure may decay to  $0.96 P_a$  during the ILRT. In addition, the TMI ILRT procedure requires the pressure to be above 49.6 psig.
- ASME Section XI examinations of the replacement concrete will be performed prior to the start of pressurization, at  $P_a$  (plus a small margin as discussed above), and following the completion of de-pressurization. An additional examination, not required by IWL-5000, is planned to be conducted at a pressure of about 30 psig to ensure that there are no early indications of damage. The IWL-5000 examinations will be performed as described below:

- The entire surface of the replacement concrete and a surrounding 2 ft. band of original concrete will be examined for cracking, spalling and other indications of damage as identified in ACI 201.1R and ACI 349.3R.
  - The record examination at  $P_a$  will commence no earlier than two hours following the completion of pressurization. A later examination will be performed during the final phases of the ILRT to ensure that damage, if any, resulting from the extended time at pressure is found and documented (pressure during this examination is limited only by ILRT requirements).
  - The final examination will commence no earlier than 12 hours following the completion of de-pressurization.
  - Examinations will meet Subsection IWL and Subsection IWA requirements applicable to VT-1C (or detailed visual) examinations. Requirements include limitations on examination distance, lighting level and demonstration character resolution.
  - Examination personnel will be qualified in accordance with the requirements of IWL-2310.
- The Responsible Engineer (IWL-2320) designated by TMI will review and evaluate all examination results.
  - At the present time, no extended surface examinations, additional examinations, or structural response measurements (IWL-5250) are planned. The Responsible Engineer will specify such requirements if these are deemed necessary based on industry operating experience or conditions found during steam generator replacement work.
  - The section of liner replaced in the opening area and the restoration welds will be examined prior to the start of pressurization and following the completion of de-pressurization as required by Subsection IWE, Article IWE-5000.
  - There is no specified limit on pressurization rate; this will probably be less than 10 psig/hour due to limitations on compressor lay-down area. Depressurization will be limited to 10 psig in any one-hour period.
  - The Responsible Engineer will prepare a comprehensive test report following the completion of the final examinations. The report will conform to the requirements of IWL-5300.
  - The ILRT will be conducted concurrently with the system pressure test. The ILRT will require a minimum of 16 hours at pressure. This includes a 4 hour stabilization period, an 8 hour period for leakage rate determination and a 4 hour verification period. Test phase durations, minimum pressure requirements, instrumentation, data intervals and leakage computations will follow the requirements of ANSI /ANS 56.8-1994.