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10 CFR 50.90

W3F1-2015-0028

April 15, 2015

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Subject: Waterford Steam Electric Station, Unit 3 Response to Request for Additional Information Regarding the Request to Permanently Extend the Integrated Leak Rate Test Frequency to 15 Years
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

- REFERENCES:
1. Entergy Letter W3F1-2014-0052, License Amendment Request to Change Technical Specifications to Extend the Type A Test Frequency to 15 Years, dated August 28, 2014. (ADAMS Accession No. ML14241A305)
 2. Letter from NRC, Request for Additional Information Regarding the Request to Permanently Extend the Integrated Leak Rate Test Frequency to 15 Years (TAC No. MF4727), dated March 13, 2015. (ADAMS Accession No. ML15069A576)

Dear Sir or Madam:

In letter dated August 28, 2014 (Reference 1), Entergy Operations, Inc. (Entergy) submitted a license amendment request to change the Waterford 3 Technical Specifications to permanently extend the Integrated Leak Rate Test (ILRT) frequency to 15 years.


In letter dated March 13, 2015 (Reference 2), NRC requested Entergy to provide additional information to support review of the license amendment request to extend the ILRT frequency. This letter provides the response to that request for additional information.

This correspondence contains no new commitments.

If you have any questions or require additional information, please contact the Regulatory Assurance Manager, John Jarrell, at 504-739-6685.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 15, 2015.

Sincerely,

 for
M. Chisum

MRC/SM

Attachments: 1. Waterford 3 Response to Request for Additional Information
(TAC No.MF4727)

cc: Mr. Marc L. Dapas, Regional Administrator
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Attachment 1

W3F1-2015-0028

Waterford 3 Response to Request for Additional Information dated March 13, 2015.

(TAC NO. MF4727)

By letter dated August 28, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14241A305), Entergy Operations, Inc., submitted a license amendment request (LAR) to change 6.15, "Containment Leakage Rate Testing Program," for the Waterford Steam Electric Station, Unit 3. The proposed change would allow a permanent extension of the Type A primary containment integrated leak rate test frequency from 10 years to 15 years.

By letter dated March 13, 2015 (ADAMS Accession No. ML15069A576), the U.S. Nuclear Regulatory Commission (NRC) staff requested that additional information be provided to complete the review of the LAR. After further review, the NRC staff requests the following additional information.

RAI #13

According to Section 9.2.3 of the Nuclear Energy Institute (NEI) 94-01 Revision 2-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50 [Title 10 of the *Code of Federal Regulations* Part 50], Appendix J", dated October, 2008 (ADAMS Accession No. ML100620847), please provide the following information for Type A tests conducted on May 12, 1991 and May 21, 2005:

- a) As-left minimum pathway leakage rate (MNPLR) for all Type B and Type C pathways that were in service, isolated, or not lined up in their test position (i.e., drained and vented to containment atmosphere) prior to performing the Type A test;
- b) List all pathways and associated leakage rates that contribute to MNPLR in item (a);
- c) Performance Leakage Rate (PLR) (=UCL+MNPLR) where UCL is the upper confidence limit;
- d) Determine if the Type A test meets the performance criterion by showing if, PLR is less than or equal to (\leq) 1.0 La (allowable leakage rate).

Please note that during the above performance determination, the following process must be followed, as quoted from Section 9.2.3 of NEI, Revision 2-A:

"In addition, leakage pathways that were isolated during performance of the test because of excessive leakage must be factored into the performance determination. If the pathway leakage can be determined by a local leakage rate test, the as-left MNPLR for that leakage path must also be added to the Type A UCL. If the pathway leakage cannot be determined by local leakage rate testing, the performance criteria for the Type A test are not met. If an excessively leaking containment penetration barrier pathway is discovered during the Type A test, and the pathway is neither a Type B or Type C tested pathway, it shall still be tested to Type B or Type C test requirements after the Type A test and its as-left MNPLR added to the Type [A] test UCL. In this case the Type A test performance criterion is not met unless that pathway is subsequently added to the Type B or Type C test program. If the excessive leakage is from a source that can be tested only during a Type A test, the Type A test performance criterion is not met."

RAI #13 a) Response:

For Type A test conducted on May 12, 1991:

Per the ILRT Final Report dated June, 1991, the as-left minimum pathway leakage rate (MNPLR) for all Type B and Type C pathways that were in service, isolated, or not lined up in their test position (i.e., drained and vented to containment atmosphere) prior to performing the Type A test was 2,701 SCCM = 0.0013 wt%/day.

For Type A test conducted on May 21, 2005:

Per the ILRT Final Test Report, "The ILRT implementing procedure PE-005-001 Revision 4 accounted for all penalty additions made to the ILRT results in Attachment 12.10, Non-Standard Penetration Alignment Adjustment. If a penetration was normally tested by the Appendix J program and it was not vented and drained to be tested by the R13 ILRT a MNPLR Type B or C leakage penalty was taken. The value of the addition and the testing dates were recorded in Attachment 12.10 as well. The MNPLR Penalty Additions were tallied and converted from sccm to %wt/day in Attachment 12.10. The final value for Type B&C penalties added to the Type A test results in 2005 was 5,148 sccm, which when converted to %wt/day in the procedure worked out to an addition of 0.0025%wt/day."

RAI#13 b) Response:

For Type A test conducted on May 12, 1991:

Per the ILRT Final Report dated June, 1991, "The fire protection penetrations (60 and 61), the ILRT pressurization line penetration (63) and ILRT pressure sense line penetration (65) were not aligned in the specified post-accident configuration during the ILRT."

Penetration	Leakage (sccm)
60	1,620
61	351
63	710
65	20
Total:	2,701 sccm = 0.0013 wt%/day

For Type A test conducted on May 21, 2005:

Per the ILRT Final Test Report, "The ILRT implementing procedure PE-005-001 Revision 4 accounted for all penalty additions made to the ILRT results in Attachment 12.10, Non-Standard Penetration Alignment Adjustment. The value of the addition and the testing dates were recorded in Attachment 12.10." The table from Attachment 12.10 is provided below.

Penetration Leakage					
Penetration	Inside Barrier(s)	Leakage Rate (sccm)	Outside Barrier(s)	Leakage Rate (sccm)	Minimum Pathway Leakage Rate (sccm)
7	PMU-151	192	PMU-152	34	34
9	IA-909	490	IA-910	470	470
23	CC-641	100	CC-644	440	100
24	CC-710	188	CC-713	127	127
26	CVC-103	113	CVC-109	76	76
28	PSL-105	38	PSL-107	1,240	38
29	PSL-203	250	PSL-204	400	250
30	PSL-303	30	PSL-304	30	30
31	GWM-104	30	GWM-105	80	30
40	SI-405 B	139	SI-407 B	109	109
41	SI-405 A	1,350	SI-407 A	1,320	1,320
42	SP-105	60	SP-106	30	30
43	BM-109	229	BM-110	186	186
44	CVC-401	60	RC-606	30	30
51	FS-405	196	FS-406	1,130	196
59	SI-343	469	SI-344	400	400
60	FP-601 A	2,080	FP-602 A	550	550
61	FP-601 B	121	FP-602 B	50	50
62	FS-415	30	FS-416	30	30
63	FLANGE	1,570	LRT-109	1,570	785 ^a
65 A	LRT-201 ^b	34	LRT-202	64	34
65 B	LRT-203 ^b	30	LRT-204	60	30
66 A	HRA-109 A	30	HRA-110 A	30	30
66 B	HRA-126 A	41	HRA-128 A	600	41
67 A	HRA-109 B	30	HRA-110 B	30	30
67 B	HRA-126 B	116	HRA-128 B	112	112
71	CMU-244	60	CMU-245	30	30
				Total	5,148

Notes:

- a. Inside and outside barriers tested together minimum pathway leakage is half of the total.
- b. Inboard isolation valve is outside the containment.

RAI#13 c) Response:

For Type A Test conducted on May 12, 1991:

Per the ILRT Final Report dated June, 1991, "Adding the total minimum pathway leakage (MNPLR) of 0.0013 wt%/day to the calculated total time 95% UCL of 0.0718 wt%/day yields the adjusted total time 95% UCL of 0.0731 wt%/day."

For Type A Test conducted on May 21, 2005:

The table below shows the Performance Leakage Rate (PLR) as provided in the ILRT Final Test Report.

	Mass Point Analysis (%wt/day)
Measured Leakage Rate at 95% UCL (%wt/day)	0.0581
Water level corrections per App B, ORT 17 (%wt/day)	-0.0039
Corrections for valves not in Accident Positions from Appendix of ILRT Procedure (%wt/day)	0.0025
Miscellaneous Additions	0.0000
"Performance Criteria" leakage rate ($\leq 0.20\%$ wt/day)	0.0567

RAI#13 d) Response:

For Type A Test conducted on May 12, 1991:

The Type A test meets the performance criterion since the PLR is less than or equal to (\leq) 1.0 La (allowable leakage). The allowable leakage rate (La) is 0.500 wt%/day and the acceptance criteria is 0.75 La or 0.375 wt%/day. Per the ILRT Final Report dated June, 1991, "It must be shown that the results of the leakage rate test would have been acceptable had the test been performed prior to any repairs being made during the local leakage rate testing program. This is shown by adding minimum pathway leakage improvements to the total time 95% UCL. Total minimum pathway improvements sum to 26,324.5 SCCM which is equivalent to 0.0127 wt%/day. Adding this to the total time 95% UCL of 0.0731 wt%/day (includes additions for penetrations 60, 61, 63, and 65) results in a theoretical as found (before repairs) leakage rate of 0.0858 wt%/day. This is well below even the as left acceptance limit of 0.375 wt%/day."

Since the Performance Leakage Rate (PLR) is less than or equal to (\leq) 1.0 La (0.5%wt/day), the Type A test meets the performance criteria.

For Type A Test conducted on May 21, 2005:

Per the ILRT Final Test Report, "The containment performance criteria of NEI-94-01 Section 9.2.3 applies to the evaluation of containment performance during a CILRT from the standpoint of determining test interval *only*. Successful completion of the CILRT at the Waterford Unit 3 Generating Station satisfies the requirements of NEI-94-01, Section 9.2.3.

As no leakage paths were isolated during the ILRT, the Performance Criteria in this case is equal to the "As-Left" ILRT Results, which, at 0.05445%wt/day was less than the acceptance criteria of 0.5%wt/day."

Since the Performance Leakage Rate (PLR) is less than or equal to (\leq) 1.0 La (0.5%wt/day), the Type A test meets the performance criteria.