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Waterford 3

W3F1-2006-0032

August 2, 2006

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

SUBJECT: License Amendment Request
Leakage Rate Testing of Containment Purge Valves
Waterford 3 Steam Electric Station
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests the following amendment for Waterford Steam Electric Station, Unit 3 (Waterford 3). This change deletes the augmented testing requirement for containment purge supply and exhaust isolation valves with resilient seal materials and allows the surveillance intervals to be set in accordance with the Containment Leakage Rate Testing Program. The Waterford 3 Containment Leakage Rate Testing Program is implemented in accordance with the *Code of Federal Regulations*, Part 50, Appendix J, Option B, and Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. This change would affect Technical Specification (TS) Surveillance Requirement (SR) 4.6.1.7.2.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c), and it has been determined that this change involves no significant hazards consideration. The bases for these determinations are included in the attached submittal.

The proposed change does not include any new commitments. The NRC has approved similar Technical Specification changes for other plants.

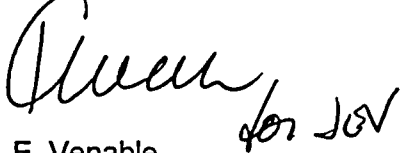
Although this request is neither exigent nor emergency, your prompt review is requested. Once approved, the amendment shall be implemented within 120 days.

If you have any questions or require additional information, please contact Bill Brice at 601-368-5076.

A017

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 2, 2006.

Sincerely,

A handwritten signature in cursive script, appearing to read "J. E. Venable", followed by a smaller signature or initials "for JEV".

J. E. Venable
Vice President, Operations
Waterford Steam Electric Station, Unit 3

JEV/WBB/cbh

Attachments:

1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)

cc: see next page

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Attachment 1

W3F1-2006-0032

Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-38 for Waterford Steam Electric Station, Unit 3 (Waterford 3).

The proposed change will revise the Operating License to delete the augmented testing requirements for the Containment Purge Valves with resilient seals and allows the surveillance intervals to be set in accordance with the Containment Leakage Rate Testing Program. The Waterford 3 Containment Leakage Rate Program is implemented in accordance with the *Code of Federal Regulations*, Part 50, Appendix J, Option B and Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. This change would affect Technical Specification (TS) Surveillance Requirement (SR) 4.6.1.7.2.

2.0 PROPOSED CHANGE

Entergy proposes to revise Waterford 3 TS SR 4.6.1.7.2 to replace the currently specified frequency for leak testing containment purge supply and exhaust isolation valves with resilient seal materials with a requirement to test these valves in accordance with the Containment Leakage Rate Program.

S.R. 4.6.1.7.2 currently states:

At least once per 3 months each containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE in accordance with the Containment Leakage Rate Testing Program.

Waterford 3 proposes to revise TS SR 4.6.1.7.2 by deleting "At least once per 3 months." No changes to the TS Bases will be required.

In summary, the proposed change will revise the Operating License of Waterford 3 to allow the Containment Purge Valves with resilient seals to be tested at the frequencies specified in the Containment Leakage Rate Testing Program. The Waterford 3 Containment Leakage Rate Program is implemented in accordance with the *Code of Federal Regulations*, Part 50, Appendix J, Option B and Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. RG 1.163 allows a nominal test interval of 30 months for containment purge and vent valves.

3.0 BACKGROUND

The Containment Atmosphere Purge (CAP) System is designed to reduce the level of radioactive contamination in the containment atmosphere to permit access to the containment. The Containment Atmosphere Purge System is nonsafety and nonseismic, except for the containment penetrations and isolation valves.

The isolation valves are 48 inch Fisher air operated butterfly valves. A resilient T-ring seat is used in these valves to obtain shutoff. The T-ring is adjustable to compensate for wear and to retain satisfactory shutoff capability. The adjustment is accomplished by means of a

compression ring and adjusting set screws. There is a repetitive task to replace the T-ring every four and one half years (three refueling cycles).

The valves are Type C leak tested between the isolation valves. The valves are normally closed but may be opened for a maximum of 90 hours per year per TS 3.6.1.7(a). This is in accordance with Standard Review Plan 6.2.4 for plants with the Safety Evaluation Report for the Construction License issued prior to July 1, 1975. The valves will automatically close upon receipt of a Purge Isolation Signal (upon detection of radioactivity above the setpoint) or a Containment Isolation Actuation Signal. The valves also close on loss of air or power and when purge is discontinued. For further information on the CAP system, see WSES-FSAR-UNIT-3, Section 9.4.5.3.

As a result of reports of an Industry Issue of unsatisfactory performance of resilient seals in butterfly-type valves due to seal deterioration, the NRC established Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" to study the problem and propose a regulatory resolution of the problem. IE Circular 77-11, "Leakage of Containment Isolation Valves with Resilient Seals," provides additional information on the issue.

As part of the resolution of the issue, the NRC imposed augmented testing requirements for containment purge and vent valves. These requirements were typically imposed as TS SRs. Since then, the industry has improved the performance of these valves. As a result of these improvements, the NRC staff has approved reduced leakage testing for several plants when adequately supported by plant specific data demonstrating that further augmented testing is not necessary. A review of the leakage history indicates that Appendix J testing intervals would be sufficient and appropriate.

4.0 TECHNICAL ANALYSIS

The NRC revised 10 CFR 50, Appendix J in 1995 to add a new, performance-based option for testing, called Option B. The staff also published RG 1.163. RG 1.163, referenced the guidance in NEI 94-01 which provides methods acceptable to the NRC staff for compliance and implementation of Option B of 10 CFR 50, Appendix J with certain exceptions. One exception concerned containment purge and vent valves which limited the leakage rate testing frequency to 30 months, "with consideration given to operating experience and safety significance." The NRC also referenced ANSI/ANS 56.8-1994, Section 3.3.4, which gives a test frequency of 30 months.

A review of leak test results for the CAP valves supports extending the interval at Waterford 3 to be consistent with staff guidance. In the last ten years, there have been only two "as found" leak rate test failures of these valves. Both failures required an adjustment of the T-ring seat of one of the two valves associated with the penetration. The testing history is presented in the table below. The leakage limit is 0.06 L_a which is approximately 63,000 standard cubic centimeters per minute (sccm).

Containment Atmospheric Purge Valves Test Results

Test Date	Penetration 10 (CAP103/CAP104) Total Pen. Leak Rate (sccm)	Penetration 11 (CAP203/CAP204) Total Pen. Leak Rate (sccm)
5/9/06	6600	3400
1/25/06	7000	1420
11/17/05	7800	20200
9/10/05	4900	3100
5/24/05	4800	1380
4/12/05	10800	450
1/19/05	8100	860
11/16/04	7400	890
8/5/04	6400	880
5/12/04	6400	670
3/2/04	6900	30
11/15/03	6000	200
8/19/03	8400	66
5/8/03	6200	550
2/20/03	7600	1300
11/4/02	467	390
7/17/02	11900	2000
4/13/02	post maintenance-5500	680
3/23/02	would not pressurize	800
1/28/02	11170	1152
11/6/01	9530	1064
8/13/01	7270	985
5/21/01	9520	1020
2/19/01	8810	1280
11/10/00	3420	1373
10/15/00	7230	1549
7/17/00	8770	925
4/10/00	10440	1229
1/12/00	10860	1186
10/5/99	4990	1282
6/29/99	7760	703
3/26/99	5200	1880
2/20/99	post maintenance - 7400	N/A
2/19/99	would not pressurize	998
10/28/98	29900	1042
7/30/98	9900	690
4/22/98	22100	1240
1/15/98	26600	1295
9/30/97	8700	1293
6/19/97	4100	3040
4/11/97	16400	3400
2/10/97	18000	3600
10/22/96	12500	1500
7/22/96	10950	1021
5/1/96	15530	1176

Note: dates for penetration 11 are approximate due to scheduling

5.0 REGULATORY ANALYSIS

5.1 Applicable Regulatory Requirements/Criteria

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met. Entergy has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TS, and do not affect conformance with any General Design Criterion (GDC) differently than described in the Updated Final Safety Analysis Report (UFSAR).

GDC 54, 55, 56, and 57 of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 require that piping systems penetrating primary reactor containment be provided with isolation capabilities that reflect the importance to safety of isolating these piping systems. The proposed TS change only affects the purge valve leakage rate test interval and does not affect the design or operation of the valves. Therefore, the isolation capability is maintained in accordance with the GDC requirements.

The Waterford 3 Containment Leakage Rate Program is implemented in accordance with 10 CFR Part 50, Appendix J, Option B and Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. RG 1.163 allows a nominal test interval of 30 months for containment purge and vent valves. The proposed TS change is consistent with 10 CFR Part 50, Appendix J, Option B and Regulatory Guide (RG) 1.163.

5.2 No Significant Hazards Consideration

The proposed change will revise the Operating License of Waterford 3 to allow the Containment Purge Valves with resilient seals to be tested in accordance with the Containment Leakage Rate Testing Program. The Waterford 3 Containment Leakage Rate Program is implemented in accordance with the *Code of Federal Regulations*, Part 50, Appendix J, Option B and Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. RG 1.163 allows a nominal test interval of 30 months for containment purge and vent valves.

Entergy Operations, Inc. has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

This change deletes the augmented testing requirement for these containment isolation valves and allows the surveillance intervals to be set in accordance with the Containment Leakage Rate Testing Program. This change does not affect the system function or design. The purge valves are not an initiator of any previously analyzed accident. Leakage rates do not affect the probability of the occurrence of any accident. Operating history has demonstrated that the valves do not degrade and

cause leakage as previously anticipated. Because these valves have been demonstrated to be reliable, these valves can be expected to perform the containment isolation function as assumed in the accident analyses. Therefore, there is no significant increase in the consequences of any previously evaluated accident.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

Extending the test intervals has no influence on, nor does it contribute in any way to, the possibility of a new or different kind of accident or malfunction from those previously analyzed. No change has been made to the design, function or method of performing leakage testing. Leakage acceptance criteria have not changed. No new accident modes are created by extending the testing intervals. No safety-related equipment or safety functions are altered as a result of this change.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The only margin of safety that has the potential of being impacted by the proposed change involves the offsite dose consequences of postulated accidents which are directly related to the containment leakage rate. The proposed change does not alter the method of performing the tests nor does it change the leakage acceptance criteria. Sufficient data has been collected to demonstrate these resilient seals do not degrade at an accelerated rate.

Because of this demonstrated reliability, this change will provide sufficient surveillance to determine an increase in the unfiltered leakage prior to the leakage exceeding that assumed in the accident analysis.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Entergy concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.3 Environmental Considerations

The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 PRECEDENCE

This license amendment is similar to several NRC approved submittal including the June 10, 2004 Catawba Nuclear Station (TAC NOS. MC3630 AND MC3631) submittal and the September 19, 1996 Grand Gulf Nuclear Station submittal TAC NO. (M95338).

7.0 REFERENCES

1. Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995
2. NEI 94-01 "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J"
3. Generic Issue B-20, "Containment Leakage Due to Seal Deterioration"
4. IE Circular 77-11 "Leakage of Containment Isolation Valves with Resilient Seals"
5. ANSI/ANS 56.8-1994, "Containment System Leakage Testing Requirements," Section 3.3.4

Attachment 2

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Proposed Technical Specification Changes (mark-up)

CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.7 Each containment purge supply and exhaust isolation valve (CAP 103, CAP 104, CAP 203, and CAP 204) shall be OPERABLE and may be open at no greater than the 52° open position allowed by the mechanical stop for less than 90 hours per 365 days.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With a containment purge supply and/or exhaust isolation valve(s) open for greater than or equal to 90 hours per 365 days at any open position, close the open valve(s) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate exceeding the limits of Surveillance Requirement 4.6.1.7.2, restore the inoperable valve(s) to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.7.1 The cumulative time that the purge supply or exhaust isolation valves are open during the past 365 days shall be determined at least once per 7 days.

4.6.1.7.2 ~~At least once per 3 months~~ ^E each containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE in accordance with the Containment Leakage Rate Testing Program.

4.6.1.7.3 Each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE during each COLD SHUTDOWN exceeding 24 hours by verifying that the mechanical stops limit the valve opening to a position < 52° open.