



**Entergy Nuclear Southwest**  
Entergy Operations, Inc.  
17265 River Road  
Killona, LA 70066  
Tel 504 739 6660  
Fax 504 739 6678

**John T. Herron**  
Vice President, Operations  
Waterford 3  
jherron@entergy.com

**W3F1-2001-0070**  
**A4.05**  
**PR**

July 23, 2001

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D. C. 20555

Waterford 3 SES  
Docket No. 50-382  
License No. NPF-38  
Technical Specification Change Request NPF-38-236  
Integrated Leakage Rate Testing Interval Extension

Gentlemen:

In accordance with 10CFR50.90, Entergy Operations, Inc. (Entergy) is hereby proposing to amend Operating License NPF-38 for Waterford 3 by requesting the attached change to the Technical Specifications. This submittal requests a change to administrative Technical Specification 6.15. The change basically provides a clarification to the statement that the Containment Integrated Leakage Rate Testing (ILRT) Program is in accordance with Regulatory Guide 1.163 in noting an exception based on NEI 94-01-1995. The effect of this change will be the allowance of an extended interval (15 years) for performance of the next ILRT.

This request is made on a risk-informed basis as described in Regulatory Guide 1.174. The Combustion Engineering Owners Group (CEOG) has developed the supporting risk-informed information in a Joint Applications Report. That report, WCAP-15691, quantifies the low level of risk associated with this change. The Joint Applications Report was submitted separately by the CE Owners Group under letter CEOG-01-184, dated July 19, 2001, "Request for Review of CEOG Report "Joint Applications Report for Containment Integrated Leak Rate Test Interval Extension."

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The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The bases for this determination is included in the attached submittal.

Entergy Operations, Inc. requests that the effective date for this Technical Specification change to be within 30 days of approval. Although this request is neither exigent nor emergency, your prompt review is requested. Waterford 3 has identified this change as affecting activities planned during the upcoming outage and on that basis requests approval of this proposed change by February 22, 2002. The requested approval date and implementation period will enable Waterford 3 to optimize refueling outage activities. This request will save critical path time in the upcoming RF11 and defer the ILRT until a subsequent outage. Deferral of the ILRT is expected to result in a savings of more than \$1, 500, 000.

The proposed change does not include any new commitments. Should you have any questions or comments concerning this request, please contact Jerry Burford at (601) 368-5755.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 23, 2001.

Very truly yours,



J. T. Herron  
Vice President, Operations  
Waterford 3

JTH/FGB/cbh  
Attachments

cc: E.W. Merschoff, NRC Region IV  
N. Kalyanam, NRC-NRR  
J. Smith  
N.S. Reynolds  
NRC Resident Inspectors Office  
Louisiana DEQ/Surveillance Division  
American Nuclear Insurers

ATTACHMENT 1

TO

W3F1-2001-0070

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NO. NPF-38

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

## **DESCRIPTION OF PROPOSED CHANGES**

The proposed amendment to the Waterford 3 Administrative Technical Specification 6.15 would add an exception to the commitment to follow the guidelines of Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program." The exception is based on information in NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance-Based Option of 10CFR50, Appendix J." The effect of this request will be an extension of the interval since the last ILRT from 10 years to 15 years.

Waterford 3 proposes to revise TS 6.15 by revising the second sentence from:

This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

to:

This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, except that the next Type A test performed after the May 12, 1991 Type A test shall be performed no later than May 11, 2006.

Regulatory Guide 1.163 endorses NEI 94-01-1995, which in turn references ANSI/ANS-56.8-1994, "Containment System Leakage Testing Requirements." However, as stated in NEI 94-01, the test intervals in ANSI/ANS 56.8-1994 are not performance-based. Therefore, licensees intending to comply with Option B in the amendment to Appendix J should establish test intervals based upon the criteria in Section 11.0 of NEI 94-01, rather than using the test intervals specified in ANSI/ANS-56.8-1994.

## **BACKGROUND**

A Type A test is an overall (integrated) leakage rate test of the containment structure. NEI 94-01 specifies an initial test interval of 48 months, but allows an extended interval of 10 years, based upon two consecutive successful tests. There is also a provision for extending the test interval an additional 15 months consistent with standard scheduling practices for Technical Specification surveillance requirements. The two most recent Type A tests at Waterford 3 have been successful, so the current interval requirement is 10 years.

Integrated Leak Rate Tests (ILRTs) have been required of operating nuclear plants to ensure the public health and safety in the event of an accident that would release radioactivity into the containment. Conservative design and construction practices have led to very few ILRTs exceeding their required acceptance criteria. The NRC has extended the allowable test frequency from three times in ten years to once in ten years on a performance basis. This change was based on NUREG 1493, "Performance

Based Containment Leak-Test Program," dated September 1995. The NUREG stated that an interval between tests of up to twenty years would contribute an imperceptible increase in risk.

Waterford 3 has performed two ILRTs during the period of its Operating License. The first ILRT was performed during Refueling Outage 2 in May 1988 and the second during Refueling Outage 4 in May 1991. On this basis, Waterford 3 currently has a ten-year interval in which to perform the next ILRT. Waterford 3 has utilized the NEI 94-01 provision allowing an interval extension of up to 15 months and would perform the ILRT during the upcoming outage. Structural degradation of containment is a gradual process that occurs due to the effects of pressure, temperature, radiation, chemical, or other factors. Such effects are identified and corrected when the containment is periodically inspected to verify structural integrity under ASME Section XI, Subsections IWE.

Waterford 3 is also aware of the discussion between the NRC and NEI concerning a permanent extension of the ILRT test interval. The basis for the discussions derives not only from the discussion in the NUREG, but also from that in EPRI TR-104285, "Risk Impact Assessment of Revised Containment Leak Rate Test Intervals." The one-time change requested here will defer the immediate need for the test and should permit consideration of any agreements reached on the generic change through a revision of NEI 94-01.

### **BASIS FOR PROPOSED CHANGE**

The proposed change to extend the ILRT interval is justified based on a combination of risk-informed analysis and a history of successful Type A tests. The risk aspects of the justification have been prepared by the CEOG and are presented in a Joint Applications Report (JAR), WCAP-15691. That report has been transmitted for NRC review separately from this submittal. A brief system description and a history of Waterford 3 Type A testing is also provided in the report (see WCAP-15691, Appendix A, section A1.2).

The Joint Applications Report provides the risk-informed supporting analyses to demonstrate that the increase in risk of extending the ILRT interval from 10 to 15 years is insignificant. That analysis, done in accordance with Regulatory Guide 1.174, shows that the increase in total plant risk due to the extended ILRT interval is well under one-half of one per cent. The delta-Large Early Release Fraction (LERF) is only  $3.30E-9$  for an increase from 10 years to 15 years. Note that the JAR demonstrates that, from a risk perspective, an extension in the interval out to 20 years has an insignificant impact on risk. This is consistent with the findings of NUREG-1493. However, this submittal requests only a one-time interval extension from 10-years to 15-years.

The risk assessment documented in the Joint Applications Report demonstrates:

1. The risk of extending the ILRT interval for Type A tests from its current interval of 10 years to 15 years was evaluated for potential public exposure impact (as measured in person-rem/year) as described in the JAR. The risk assessment predicts a slight increase in risk when compared to that estimated from current requirements. For the change from a 10-year test interval to a 15-year test interval, the increase in the risk (person-rem/year within 50 miles) was found to be 0.17 percent. Note that the cumulative increase in risk, given the change from the original 3 in 10-year test interval to a 15-year test interval, was found to be 0.39 percent. This is just slightly greater than the range of risk increase, 0.02 to 0.14 percent, estimated in NUREG-1493 when going from a 3 in 10-year test interval to a 10-year interval. NUREG-1493 concluded this represents an imperceptible increase in risk. Therefore, the increase in the risk for the proposed change is considered small.
2. RG 1.174 provides guidance for determining the risk impact of plant-specific changes to the licensing basis. RG 1.174 defines very small changes in the risk guidelines as increases in CDF less than  $1E-6$  per reactor year and increases in LERF less than  $1E-7$  per reactor year. Since the Type A test does not impact CDF, the relevant criterion in evaluating this proposed change is LERF. The increase in LERF resulting from a change in the Type A test frequency from the current 1 in 10 years to 1 in 15 years is estimated to be  $3.30E-9$ /year. The cumulative increase in LERF resulting from a change in the Type A test interval from the original 3 in 10 years to 1 in 15 years is estimated to be  $7.70E-9$ /year. Increasing the Type A interval to 15 years is considered to be a very small change in LERF.
3. RG 1.174 also encourages the use of risk analysis techniques to help ensure and show that the proposed change is consistent with the defense-in-depth philosophy. Consistency with the defense-in-depth philosophy is maintained if a reasonable balance is preserved among prevention of core damage, prevention of containment failure, and consequence mitigation. The change in the conditional containment failure probability was estimated to be 0.05 percent for the proposed change and 0.11 percent for the cumulative change of going from a test interval of 3 in 10 years to 1 in 15 years. Waterford 3 concludes that the very small impact on the conditional containment failure probability demonstrates that consistency with the defense-in-depth philosophy is maintained for the proposed change.

Containment leak-tight integrity is also verified through periodic inservice inspections conducted in accordance with the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI. More

specifically, Subsection IWE provides the rules and requirements for inservice inspection of Class MC pressure-retaining components and their integral attachments in light-water cooled plants. Furthermore, NRC regulation 10 CFR 50.55a(b)(2)(ix)(E) requires licensees to conduct a general visual inspection of the containment in accordance with ASME XI during each 10 years interval. And, inspections required by the Maintenance Rule (10 CFR 50.65) also may identify containment degradation that could affect leaktightness. These requirements will not be changed as a result of the extended ILRT interval. In addition, Appendix J, Type B local leak tests performed to verify the leak-tight integrity of containment penetration bellows, airlocks, seals, and gaskets are also not affected by the change to the Type A test frequency.

### PRECEDENTS

A similar amendment request has been approved for:

Facility	Amendment #(s)	Approval Date	Accession #
Indian Point 3	206	April 17, 2001	ML011020315

### DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Energy Operations, Inc. is proposing that the Waterford 3 Operating License be amended to revise Technical Specification 6.15. The proposed change would permit a one-time extension of the interval between Integrated Leak Rate Tests to 15 years with an allowance for an additional 15-month extension as demonstrated to be acceptable in NEI 94-01. The change is based on performance-based testing criteria provided in the NEI 94-01, as endorsed by Regulatory Guide 1.163.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards considerations using the standards in 10CFR50.92(c). A discussion of these standards as they relate to this amendment request follows:

- 1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

10CFR50, Appendix J was amended to incorporate provisions for performance-based testing in 1995. The proposed amendment to Technical Specification (TS) 6.15 adds a one-time extension to the current interval for Type A testing (i.e., the integrated leak rate test). The current interval of ten years, based on past performance, would be extended on a one-time basis to 15-years from the date

of the last test. The proposed extension to the Type A test cannot increase the probability of an accident since there are no design or operating changes involved and the test is not an accident initiator. The proposed extension of the test interval does not involve a significant increase in the consequences since research documented in NUREG-1493 has found that, generically, fewer than 3% of the potential containment leak paths are not identified by Type B and C testing. Waterford 3, through testing and containment inspections, also provides a high degree of assurance that the containment will not degrade in a manner detectable only by a Type A test. Inspections required by the Maintenance Rule (10CFR50.65) and by the American Society of Mechanical Engineers Boiler and Pressure Vessel Code are performed to identify containment degradation that could affect leaktightness.

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

**2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

The proposed extension to the interval for the Type A test does not involve any design or operational changes that could lead to a new or different kind of accident from any accidents previously evaluated. The test itself is not changing and is just to be performed after a longer interval. The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation.

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

**3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?**

The generic study of the increase in the Type A test interval, NUREG-1493, concluded there is an imperceptible increase in the plant risk associated with extending the test interval out to twenty years. Further, the extended test interval would have a minimal effect on this risk since Type B and C testing detect 97% of potential leakage paths. For the requested change in the Waterford 3 ILRT interval, it was determined that the risk contribution of leakage will increase 0.17%. This change is considered very small and does not represent a significant reduction in the margin of safety.

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

Therefore, based on the reasoning presented above, Entergy Operations has determined that the requested change does not involve a significant hazards consideration.

### **ENVIRONMENTAL IMPACT EVALUATION**

Pursuant to 10CFR51.22(b), an evaluation of the proposed amendment has been performed and has determined it meets the criteria for categorical exclusion set forth in 10CFR 51.22 (c) (9) of the regulations. The basis for this determination is as follows:

1. The proposed license amendment does not involve a significant hazards consideration as described previously in the evaluation.
2. This change does not result in a significant change or significant increase in the radiological doses for any Design Basis Accident. The proposed license amendment does not result in a significant change in the types or a significant increase in the amounts of any effluents that may be released off-site.
3. The proposed license amendment does not result in a significant increase to the individual or cumulative occupational radiation exposure because this change does not modify the system or the manner in which the system is operated.

ATTACHMENT 2

TO

W3F1-2001-0070

MARKUPS of PROPOSED TECHNICAL SPECIFICATION CHANGE

IN THE MATTER OF AMENDING

LICENSE NO. NPF-38

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

## ADMINISTRATIVE CONTROLS

### PROCESS CONTROL PROGRAM (Continued)

1. Sufficient information to support the change together with the appropriate analyses or evaluation justifying the change(s) and
  2. A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after the approval of the General Manager Plant Operations.

### 6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 The ODCM shall be approved by the Commission prior to implementation.

6.14.2 Licensee-initiated changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained as required by the Quality Assurance Program Manual. This document shall contain:
  1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
  2. A determination that the change will maintain the level of radioactive effluent control required pursuant to 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose or setpoint calculations.
- b. Shall become effective after the approval of the General Manager Plant Operations.
- c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

### 6.15 CONTAINMENT LEAKAGE RATE TESTING PROGRAM

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, except that the next Type A test performed after the May 12, 1991 Type A test shall be performed no later than May 11, 2006.