



FPL Energy.

Duane Arnold Energy Center

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November 14, 2007

NG-07-0729
10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Duane Arnold Energy Center
Docket 50-331
License No. DPR-49

Technical Specification Change Request, TSCR-094, Application for Technical Specification Improvement to Adopt TSTF-343, Revision 1, "Containment Structural Integrity," to Add Exception for Visual Inspection of the Containment
Affected Technical Specification: Section 5.5.12

Pursuant to 10 CFR 50.90, FPL Energy Duane Arnold, LLC (FPL Energy Duane Arnold) hereby requests revision to the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC).

The proposed changes would revise TS Programs and Manuals Section 5.5.12, "Primary Containment Leakage Rate Testing Program," to allow FPL Energy Duane Arnold to use the requirements of ASME Section XI code, Subsection IWE for visual examination of the steel containment.

The changes are consistent with NRC approved Industry Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-343, Revision 1, "Containment Structural Integrity."

FPL Energy Duane Arnold requests an implementation period of 60 days after issuance of the license amendment.

This application has been reviewed by the Onsite Review Group. A copy of this submittal, along with the 10 CFR 50.92 evaluation of "No Significant Hazards Consideration," is being forwarded to our appointed state official pursuant to 10 CFR 50.91.

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A017

NRR

No new commitments and no changes to previous commitments are made in this submittal. If you have any questions or require additional information, please contact Steve Catron at (319) 851-7234.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 14, 2007.



Richard L. Anderson
Vice President, Duane Arnold Energy Center
FPL Energy Duane Arnold, LLC

Enclosures: A) Evaluation of Proposed Change
B) Proposed Technical Specification Changes (Mark-Up)
C) Proposed Technical Specification Pages (Re-Typed)

cc: Administrator, Region III, USNRC
Project Manager, DAEC, USNRC
Resident Inspector, DAEC, USNRC
D. McGhee (State of Iowa)

ENCLOSURE A

EVALUATION OF PROPOSED CHANGE

Subject: Application for Technical Specification Improvement to Adopt TSTF-343, Revision 1, "Containment Structural Integrity"

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ENCLOSURE A

Application for Technical Specification Improvement to Adopt TSTF-343, Revision 1, "Containment Structural Integrity"

1.0 DESCRIPTION

This letter is a request to amend Operating License DPR-49 for the Duane Arnold Energy Center (DAEC). The proposed changes would revise Technical Specifications (TS) Programs and Manuals Section 5.5.12, "Primary Containment Leakage Rate Testing Program," to allow use of ASME Section XI code, Subsection IWE for visual examination of the steel containment for consistency with the requirements of 10 CFR 50.55a(g)(4). This regulation requires licensees to update their containment inservice inspection requirements in accordance with Subsections IWE and IWL of Section XI, Division I of the ASME Boiler and Pressure Vessel Code as limited by 10 CFR 50.55a(b)(2)(vi) and modified by 10 CFR 50.55a(b)(2)(viii) and 10 CFR 50.55a(b)(2)(ix).

As a result, FPL Energy Duane Arnold will be required to perform one less visual inspection of the containment during the ten year interval. However, the requirements for inspection in Subsection IWE of Section XI are more rigorous than those currently required to be performed.

2.0 PROPOSED CHANGE

Consistent with NRC-approved TSTF-343, Revision 1, the proposed TS change includes revision to TS Section 5.5.12, "Primary Containment Leakage Rate Testing Program," by adding the following exception to Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program,":

"The visual examination of the containment intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B will be performed in accordance with the requirements of and frequency specified by the ASME Section XI code, Subsection IWE, except where relief has been authorized by the NRC."

This change also adds numbering and lettering for clarity as well as consistency with TSTF-343. The portions of the TSTF which discuss the "Pre-Stressed Concrete Tendon Surveillance Program," and Subsection IWL of Section XI, are not applicable since DAEC uses a Mark I steel containment.

3.0 BACKGROUND

On January 7, 1994, the NRC published a proposed amendment to the regulations to incorporate by reference the 1992 Edition with the 1992 Addenda of Subsections IWE and IWL of Section XI, Division I of the ASME Boiler and Pressure Vessel Code (the Code). The final rule, 10 CFR 50.55a(g)(6)(ii)(B), became effective on September 9, 1996, and requires licensees to implement Subsections IWE and IWL, with specified modifications and limitations, by September 9, 2001.

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4.0 TECHNICAL ANALYSIS

The Technical Specification requirements for the Primary Containment Leakage Rate Testing Program specify that the program shall be in accordance with the guidelines contained in Regulatory Guide 1.163. Regulatory Position C.3 of the regulatory guide states that "Section 9.2.1, 'Pretest Inspection and Test Methodology,' of NEI 94-01 provides guidance for the visual examination of accessible interior and exterior surfaces of the containment system for structural problems. These examinations should be conducted prior to initiating a Type A test, and during two other refueling outages before the next Type A test if the interval for the Type A test has been extended to 10 years, in order to allow for early uncovering of evidence of structural deterioration." There are no specific requirements in NEI 94-01 for the visual examination except that it is to be a general visual examination of accessible interior and exterior surfaces of the primary containment components.

The frequency of visual examination of the containment per Subsection IWE is, in general, three visual examinations over a 10-year period. The visual examinations performed pursuant to Subsection IWE are performed during refueling outages since this is the only time that the containment is fully accessible.

The visual examinations performed pursuant to Subsection IWE are more rigorous than those performed pursuant to Regulatory Guide 1.163 and NEI 94-01. For example, Subsection IWE requires the general visual examination to be the responsibility of an individual who is knowledgeable in the requirements for design, inservice inspection, and testing of Class MC and metallic liners of Class CC components. Subsection IWE also requires the examination to be performed either directly or remotely, by an examiner with visual acuity sufficient to detect evidence of degradation.

Based on the above, FPL Energy Duane Arnold plans to ensure that a comprehensive visual examination of the containment is performed in accordance with Code requirements except where relief has been granted by the NRC. Furthermore, with respect to examinations performed pursuant to IWE, visual examinations of the containment must be reviewed by an Inspector employed by a State or municipality of the United States or an Inspector regularly employed by an insurance company authorized to write boiler and pressure vessel insurance. The combination of the Code requirements for the rigor of the visual examinations plus the third party review will more than offset the fact that one fewer visual examination of the containment will be performed during a 10-year interval.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

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

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Response: No

The proposed change revises the TS administrative controls programs for consistency with the requirements of 10 CFR 50.55a(g)(4) for components classified as Code Class MC. The proposed change affects the frequency of visual examinations that will be performed for the containment. The frequency of visual examinations of the containment has no relationship to or adverse impact on the probability of any of the initiating events assumed in the accident analyses. The proposed change would allow visual examinations that are performed pursuant to NRC approved ASME Section XI Code requirements (except where relief has been granted by the NRC) to meet the intent of visual examinations required by Regulatory Guide 1.163, without requiring additional visual examinations pursuant to the Regulatory Guide. The intent of early detection of deterioration will continue to be met by the more rigorous requirements of the Code required visual examinations. As such, the safety function of the containment as a fission product barrier is maintained. The proposed change does not impact any accident initiators or analyzed events or assumed mitigation of accident or transient events. It does not involve the addition or removal of any equipment, or any design changes to the facility.

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

The proposed change revises the TS administrative controls programs for consistency with the requirements of 10 CFR 50.55a(g)(4) for components classified as Code Class MC. The change affects the frequency of visual examinations that will be performed for the containment. The proposed change does not involve a modification to the physical configuration of the plant (i.e., no new equipment will be installed) or change in the methods governing normal plant operation. The safety function of the containment as a fission product barrier is maintained. The proposed change will not impose any new or different requirements or introduce a new accident initiator, accident precursor, or malfunction mechanism. Additionally, there is no change in the types or increases in the amounts of any effluent that may be released off-site and there is no increase in individual or cumulative occupational exposure.

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

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

Response: No

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The proposed change revises the Improved Standard Technical Specification Administrative Controls program requirements for consistency with the requirements of 10 CFR 50, paragraph 55a(g)(4) for components classified as Code Class MC. The change affects the frequency of visual examinations that will be performed for the containment. The safety function of the containment as a fission product barrier will be maintained.

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

5.2 Applicable Regulatory Requirements/Criteria

The regulatory basis for Boiling Water Reactor (BWR) Improved Standard Technical Specifications (ISTS) 3.6.1.1, "Primary Containment," is to ensure that the containment is capable of remaining leak-tight following a loss of coolant accident. This ensures that offsite radiation exposures are maintained within the limits of 10 CFR 100.

10 CFR 50, Appendix A, General Design Criterion 16, "Design," requires that reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as the postulated accident conditions require.

This Technical Specification change will not reduce the leak-tightness of the containment. Therefore, based on the considerations discussed above:

- 1) There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner;
- 2) Such activities will be conducted in compliance with the Commission's regulations; and
- 3) Issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed change would change a requirement with respect to installation or use of a facility component located within the restricted areas, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9).

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Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

7.0 REFERENCES

1. 10 CFR 50.55a, "Codes and Standards"
2. Regulatory Guide 1.163, "Performance-Based Containment Leak-Testing Program."
3. Letter dated January 18, 2000, to W. R. McCollum, Jr., Duke Energy Corporation, "Oconee Nuclear Station Units 1, 2, and 3 RE: Issuance of Amendments (TAC Nos. MA6568, MA6569, and MA6570)." Amendment No. 310. (ML003680348)
4. Letter dated June 6, 2001, to J. B. Beasley, Jr., Southern Nuclear Operating Company, Inc, "Vogtle Electric Generating Plant, Units 1 and 2 RE: Issuance of Amendments (TAC Nos. MB1097 and MB1098)." Amendment Nos. 122 and 100. (ML011570674)
5. Letter dated January 30, 2001, to C. H. Cruse, Constellation Nuclear, "Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 RE: Containment Tendon Surveillance Program – Amendment (TAC Nos. MB0011 and MB0012)." Amendment Nos. 240 and 214. (ML003776835)
6. Letter dated January 31, 2001, to T. F. Plunkett, Florida Power and Light Company, "Turkey Point Units 3 and 4 – Issuance of Amendments Regarding Changes to Containment Structural Integrity Technical Specifications (TAC Nos. MA9047 and MA9048)." Amendment Nos. 210 and 204. (ML010360301)
7. Letter dated March 19, 2004, to R. R. Overbeck, Arizona Public Service Company, "Palo Verde Nuclear Generating Station, Units 1, 2, and 3 – Issuance of Amendment on Containment Tendon Surveillance Program and Containment Leakage Rate Testing Program (TAC Nos. MC1069, MC1070, and MC1071)." Amendment No. 151. (ML040850657)
8. Letter dated March 17, 2004, to R. A. Muench, Wolf Creek Nuclear Operating Corporation, "Wolf Creek Generating Station – Issuance of Amendment Re: Containment Tendon Surveillance Program and Containment Leakage Rate Testing Program." Amendment No. 152. (TAC No. MC1068, ML040820934)
9. Letter dated June 26, 2007, to J. S. Keenan, Pacific Gas and Electric Company, "Diablo Canyon Power Plant Unit Nos. 1 and 2 – Issuance of Amendments Re: Technical Specification 5.5.16 "Containment Leakage Rate Testing Program," for Consistency With 10 CFR 50.55a(g)(4)." (TAC Nos. MD3977 and MD3978)

ENCLOSURE B

PROPOSED TECHNICAL SPECIFICATION CHANGES

(MARK-UP)

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

2. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;
 3. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and
 4. Other appropriate limitations and remedial or compensatory actions.
- b. A loss of safety function exists when, assuming no concurrent single failure, no concurrent loss of offsite power or no concurrent loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:
1. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or
 2. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or
 3. A required system redundant to support system(s) for the supported systems (1) and (2) above is also inoperable.
- c. The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5.12 Primary Containment Leakage Rate Testing Program

- a. A program shall be established to implement the leakage rate testing of the primary 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, as modified by the following exceptions:

(continued)

5.5 Programs and Manuals

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

1. ***The visual examination of the containment intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B, will be performed in accordance with the requirements of and frequency specified by the ASME Section XI code, Subsection IWE, except where relief has been authorized by the NRC.***
2. Exception to NEI 94-01, Rev. 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J":

The first Type A test after the September 1993 Type A test shall be performed no later than September 2008.

- b. The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 45.7 psig.
 - c. The maximum allowable primary containment leakage rate, L_a , at P_a , shall be 2.0% of primary containment air weight per day.
 - d. Leakage Rate acceptance criteria are:
 1. Primary Containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During the first startup following testing in accordance with this program, the leakage rate acceptance criteria are: $\leq 0.60 L_a$ for the Type B and Type C tests; and, $\leq 0.75 L_a$ for the Type A tests; and
 2. The air lock testing acceptance criterion is overall air lock leakage rate $\leq 0.05 L_a$ when tested at $\geq P_a$.
 - e. The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.
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ENCLOSURE C

PROPOSED TECHNICAL SPECIFICATION PAGES

(RE-TYPED)

2 Pages Follow

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

2. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;
 3. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and
 4. Other appropriate limitations and remedial or compensatory actions.
- b. A loss of safety function exists when, assuming no concurrent single failure, no concurrent loss of offsite power or no concurrent loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:
1. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or
 2. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or
 3. A required system redundant to support system(s) for the supported systems (1) and (2) above is also inoperable.
- c. The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5.12 Primary Containment Leakage Rate Testing Program

- a. A program shall be established to implement the leakage rate testing of the primary 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, as modified by the following exceptions:

(continued)

5.5 Programs and Manuals

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

1. The visual examination of the containment intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B, will be performed in accordance with the requirements of and frequency specified by the ASME Section XI code, Subsection IWE, except where relief has been authorized by the NRC.
2. Exception to NEI 94-01, Rev 0, "Industry Guideline for implementing Performance-Based Option of 10 CFR 50, Appendix J":

The first Type A test after the September 1993 Type A test shall be performed no later than September 2008.

- b. The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 45.7 psig.
 - c. The maximum allowable primary containment leakage rate, L_a , at P_a , shall be 2.0% of primary containment air weight per day.
 - d. Leakage Rate acceptance criteria are:
 1. Primary Containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During the first startup following testing in accordance with this program, the leakage rate acceptance criteria are: $\leq 0.60 L_a$ for the Type B and Type C tests; and, $\leq 0.75 L_a$ for the Type A tests; and
 2. The air lock testing acceptance criterion is overall air lock leakage rate $\leq 0.05 L_a$ when tested at $\geq P_a$.
 - e. The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.
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