



FPL

MAR 01 2007

10 CFR 50.90

L-2007-022

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington D. C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to NRC Request for Additional Information -
Application for Technical Specification Improvement
Regarding Steam Generator Tube Integrity

By letter L-2006-074 dated April 27, 2006, as supplemented by letter L-2006-229 dated December 5, 2006, Florida Power and Light Company (FPL) submitted a license amendment request to revise the Turkey Point Units 3 and 4 Technical Specifications (TS). The proposed amendments revise the TS requirements related to steam generator tube integrity consistent with NRC-approved Revision 4 to Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-449, "Steam Generator Integrity."

Additional information was requested by the NRC staff in discussions with FPL representatives on January 17, 2007. Attachment 1 to this letter provides the FPL response to the questions from the NRC staff. Attachment 2 provides the revised proposed marked-up TS pages incorporating the changes discussed in Attachment 1. Attachment 3 provides the revised clean TS pages. The changes to the proposed amendments as discussed in the response to the request for additional information (Attachment 1) are editorial in nature; therefore, do not alter the significant hazards consideration or the environmental assessment previously submitted by FPL letter L-2006-074.

In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the State Designee for the State of Florida.

Should there be any questions concerning the information contained herein, please contact James Connolly at (305) 246-6632.

Response to NRC Request for Additional Information -
Application for Technical Specification Improvement
Regarding Steam Generator Tube Integrity

L-2007-022
Page 2

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

Very truly yours,

MAR 01 2007

Executed on



William Jefferson, Jr.
Vice President
Turkey Point Nuclear Plant

Attachment 1: Response to NRC RAI

Attachment 2: Proposed Technical Specification Changes (Mark Up)

Attachment 3: Proposed Technical Specification Pages

cc: Regional Administrator, Region II, USNRC
USNRC Turkey Point Project Manager
Senior Resident Inspector, USNRC, Turkey Point
W. A. Passetti, Florida Department of Health

Attachment 1
Response to NRC Request for Additional Information -
Application for Technical Specification Improvement
Regarding Steam Generator Tube Integrity

NRC Question 1:

On page 6-18a, proposed TS 6.8.4.j.c describes alternate tube repair criteria. The format which it was proposed to incorporate the alternate repair criteria into the TS could be misapplied in that either one or the other could be chosen. Since both 6.8.4.j.c.1 and 6.8.4.j.c.2 constitute the alternate repair criteria (i.e., item 2 must be implemented if item 1 is implemented), discuss your plans to remove the number "2." such that the entire repair criteria is implemented. In addition, the staff notes that the final TS pages do not match the marked up TS pages in item 6.8.4.j.c.1 ("do" versus "does" in the last sentence).

FPL Response:

The number "2" has been removed as requested. In addition, the discrepancy noted by the staff in the final TS pages in item 6.8.4.j.c.1 has been corrected.

NRC Question 2:

In the last sentence of proposed TS 6.8.4.j.c.2, it states: "...below the top of the tubesheet shall be removed from service." Since there are no repair methods approved for Turkey Point, please discuss your plans to clarify that these tubes "...shall be plugged."

FPL Response:

The requested change has been made.

NRC Question 3:

In proposed TS 6.8.4.j.d, the inspections in the lower portion of the tubesheet are discussed. Since it would not be appropriate to exclude the bottom portion of the tube in the tubesheet from inspection, unless the alternate repair criteria are implemented, discuss your plans to modify the sentence to indicate that this region may be excluded "...from inspection when the alternate tube repair criteria in technical specification 6.8.4.j.c.1 is implemented." The staff notes that the alternate repair criteria are not required to be implemented (they may be implemented).

FPL Response:

The additional wording requested has been added with minor format changes for consistency with the current format of the Turkey Point Units 3 and 4 Technical Specifications as follows: "...from inspection when the alternate tube repair criteria in Specification 6.8.4.j.c.1 is implemented."

Attachment 2 to L-2007-022

Proposed Technical Specification Changes (Mark Up)

TS Page 6-18

**Revised INSERT 6.8.4.j for TS Page 6-18
(Replaces L-2006-229, Enclosure 2 pages 18 through 21)**

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

- The combined As-left leakage rates determined on a maximum pathway leakage rate basis for all penetrations shall be verified to be less than $0.60 L_a$, prior to increasing primary coolant temperature above 200°F following an outage or shutdown that included Type B and Type C testing only.
- The As-found leakage rates, determined on a minimum pathway leakage rate basis, for all newly tested penetrations when summed with the As-left minimum pathway leakage rate leakage rates for all other penetrations shall be less than $0.6 L_a$, at all times when containment integrity is required.
- 3) Overall air lock leakage acceptance criteria is $\leq 0.05 L_a$, when pressurized to P_a .

The provisions of Specification 4.0.2 do not apply to the test frequencies contained within the Containment Leakage Rate Testing Program.

i. Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:
 - 1. Change in the TS incorporated in the license or
 - 2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of Specification 6.8.4 i.b. above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

INSERT
6.8.4.j

6.8.5 Administrative procedures shall be developed and implemented to limit the working hours of personnel who perform safety-related functions, e.g. licensed Senior Operators, licensed Operators, health physicists, auxiliary operators, and key maintenance personnel. The procedures shall include guidelines on working hours that ensure that adequate shift coverage is maintained without routine heavy use of overtime for individuals.

Any deviation from the working hour guidelines shall be authorized by the applicable department manager or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Controls shall be included in the procedures to require a periodic independent review be conducted to ensure that excessive hours have not been assigned. Routine deviation from the working hour guidelines shall not be authorized.

ADMINISTRATIVE CONTROLS - INSERT 6.8.4.j

j. Steam Generator (SG) Program

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:

- a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the “as found” condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The “as found” condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.
- b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational leakage.
 1. Structural integrity performance criterion: All in-service SG tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cooldown and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary-to-secondary accident induced leakage rate for any design basis accident, other than SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 1 gpm total through all SGs and 500 gallons per day through any one SG.
 3. The operational leakage performance criterion is specified in LCO 3.4.6.2, "Reactor Coolant System Operational Leakage."
- c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

The following alternate tube repair criteria may be applied as an alternative to the 40% depth based criteria:

1. For Unit 3 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, and for Unit 4 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, flaws found in the portion of the tube below 17 inches from the top of the hot leg tubesheet do not require plugging.

For Unit 3 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, and for Unit 4 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, all tubes with flaws identified in the portion of the tube within the region from the top of the hot leg tubesheet to 17 inches below the top of the tubesheet shall be plugged.

- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. For Unit 3 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, and for Unit 4

during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, the portion of the tube below 17 inches from the top of the hot leg tubesheet is excluded from inspection when the alternate tube repair criteria in Specification 6.8.4.j.c.1 is implemented. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tube may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.
 2. Inspect 100% of the tubes at sequential periods of 120, 90, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outages nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.
 3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.
- e. Provisions for monitoring operational primary-to-secondary leakage.

Attachment 3 to L-2007-022

**Proposed Technical Specification Pages with Revised INSERT 6.8.4.j
(Only affected pages provided)**

**TS Page 6-18
TS Page 6-18a
TS Page 6-18b**

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

- The combined As-left leakage rates determined on a maximum pathway leakage rate basis for all penetrations shall be verified to be less than $0.60 L_a$, prior to increasing primary coolant temperature above 200°F following an outage or shutdown that included Type B and Type C testing only.
 - The As-found leakage rates, determined on a minimum pathway leakage rate basis, for all newly tested penetrations when summed with the As-left minimum pathway leakage rate leakage rates for all other penetrations shall be less than $0.6 L_a$, at all times when containment integrity is required.
- 3) Overall air lock leakage acceptance criteria is $\leq 0.05 L_a$, when pressurized to P_a .

The provisions of Specification 4.0.2 do not apply to the test frequencies contained within the Containment Leakage Rate Testing Program.

i. Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:
 - 1. Change in the TS incorporated in the license or
 - 2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of Specification 6.8.4 i.b. above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

j. Steam Generator (SG) Program

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:

- a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

- b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational leakage.
1. Structural integrity performance criterion: All in-service SG tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cooldown and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.
 2. Accident induced leakage performance criterion: The primary-to-secondary accident induced leakage rate for any design basis accident, other than SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 1 gpm total through all SGs and 500 gallons per day through any one SG.
 3. The operational leakage performance criterion is specified in LCO 3.4.6.2, "Reactor Coolant System Operational Leakage."
- c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

The following alternate tube repair criteria may be applied as an alternative to the 40% depth based criteria:

1. For Unit 3 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, and for Unit 4 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, flaws found in the portion of the tube below 17 inches from the top of the hot leg tubesheet do not require plugging.

For Unit 3 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, and for Unit 4 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, all tubes with flaws identified in the portion of the tube within the region from the top of the hot leg tubesheet to 17 inches below the top of the tubesheet shall be plugged.

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. For Unit 3 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, and for Unit 4 during Refueling Outage 23 and the subsequent operating cycles until the next scheduled inspection, the portion of the tube below 17 inches from the top of the hot leg tubesheet is excluded from inspection when the alternate tube repair criteria in Specification 6.8.4.j.c.1 is implemented. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tube may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.
1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.
 2. Inspect 100% of the tubes at sequential periods of 120, 90, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outages nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.
 3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.
- e. Provisions for monitoring operational primary-secondary leakage.

6.8.5 Administrative procedures shall be developed and implemented to limit the working hours of plant staff who perform safety-related functions, e.g. licensed Senior Operators, licensed Operators, health physicists, auxiliary operators, and key maintenance personnel. The procedures shall include guidelines on working hours that ensure that adequate shift coverage is maintained without routine heavy use of overtime for individuals.

Any deviation from the working hour guidelines shall be authorized by the applicable department manager or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the Plant General Manager or his designee to assure that excessive hours have not been assigned. Routine deviation from the working hour guidelines shall not be authorized.