10 CFR 50.90
L-2014-235
July 22, 2014

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

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Renewed Facility Operating License Nos. DPR-31 and DPR-41

Subject: License Amendment Request No. 231, Application to Revise Ultimate Heat Sink Temperature Limit – Supplement 1, and Response to Request for Additional Information

References:
1. Florida Power & Light Company (FPL) Letter L-2014-216, "License Amendment Request No. 231, Application to Revise Technical Specifications to Revise Ultimate Heat Sink Temperature Limit," dated July 10, 2014.
2. Florida Power & Light Company Letter L-2014-226, "License Amendment Request No. 231, Application to Revise Ultimate Heat Sink Temperature Limit – Request for Emergency Approval," July 17, 2014.
3. Email from NRC Project Manager for Turkey Point to FPL, "Turkey Point 3 and 4 Request for Additional Information - LAR 231 (TAC MF4392 and MF4393)," dated July 18, 2014 (RAIs 1-3)

In Reference 1 Florida Power & Light Company (FPL) requested an amendment to the Technical Specifications (TS) for the Turkey Point Nuclear Plant (Turkey Point), Units 3 and 4. In Reference 2 FPL requested the NRC to review and approve the application on an emergency basis. This letter supplements the application by revising the proposed Surveillance Requirements (SR) for the ultimate heat sink (UHS). The revision to the proposed SRs is contained in Enclosure 1. In addition, Enclosure 2 to this letter provides the FPL response to the Request for Additional Information (RAI) contained in Reference 3.

The Reference 1 application proposed to revise the UHS water temperature limit from 100°F to 104°F with consideration for instrument uncertainty. This supplement revises the proposed wording in the SRs to be consistent with the Limiting Condition for Operation, increases the proposed frequency of verifying UHS water temperature when water temperature exceeds 100°F, and adds a requirement to the SRs to add instrument uncertainty to the indicated value.

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NRR

Enclosure 1 supplements the Reference 1 application and includes a mark-up of TS 3/4.7.4, Ultimate Heat Sink, reflecting the changes discussed above. These changes do not alter the determination of no significant hazards and the environmental considerations contained in the application because the revised request is bounded by the basis for change to a higher UHS temperature limit contained in the original application.

There are no new commitments made in this submission.

The Turkey Point Plant Nuclear Safety Committee has reviewed and approved this supplement to the license amendment application. In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the State Designee of Florida.

If you have any questions or require additional information, please contact Mr. Robert Tomonto at 305-246-7327.

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

Executed on July 22, 2014.

Very truly yours,

Michael Kiley
Vice President
Turkey Point Nuclear Plant

Enclosures: 1. Supplement to Application to Revise Ultimate Heat Sink Temperature Limit
2. Response to Request for Additional Information Nos. 1, 2 and 3

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, Turkey Point Nuclear Plant
USNRC Senior Resident Inspector, Turkey Point Nuclear Plant
Ms. Cindy Becker, Florida Department of Health

Turkey Point Units 3 and 4

License Amendment Request No. 231
Supplement

Application to Revise Ultimate Heat Sink Temperature Limit

Enclosure 1

1. Description

2. Proposed Change

3. Discussion of Change to the Application

4. Reference

5. Attachments

    1. Proposed Technical Specification Page 3/4 7-17 Mark-up
    2. Change to Technical Specification Bases 3/4.7.4 Mark-Up

1.0 Description

Florida Power & Light Company (FPL) amends the application (Reference 1) to revise the ultimate heat sink (UHS) temperature limit. With this supplement FPL is revising the proposed changes to the Surveillance Requirements (SR).

2.0 Proposed Change

This application supplement revises the proposed wording in the SRs to be consistent with the Limiting Condition for Operation (LCO) in Technical Specification (TS) 3/4.7.4, Ultimate Heat Sink, increases the proposed frequency of verifying UHS water temperature when water temperature exceeds 100°F, and adds a requirement to the SRs to add instrument uncertainty to the indicated value. Sections 2.1 and 2.2 below update those same sections contained in the Reference 1 application.

2.1 Current TS and Bases

Current TS 3/4.7.4, addresses UHS system operability by requiring that the average supply temperature to the Intake Cooling Water (ICW) system be within specified limits:

LCO 3.7.4 states:

> The ultimate heat sink shall be OPERABLE with an average supply water temperature less than or equal to 100°F.

APPLICABILITY is Modes 1, 2, 3, and 4.

The ACTION states:

> With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 12 hours and In COLD SHUTDOWN within the following 30 hours. This ACTION shall be applicable to both units simultaneously.

SR 4.7.4 states:

> The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the average supply water temperature* to be within its limit.

The asterisk (*) refers to a footnote that reads:

> Portable monitors may be used to measure the temperature.

TS Bases

The limit on Ultimate Heat Sink (UHS) temperature in conjunction with the SURVEILLANCE REQUIREMENTS of Technical Specification 3/4.7.2 will ensure that sufficient cooling capacity is available either: (1) To provide normal cool down of the facility, or (2) To mitigate the effects of accident conditions within acceptable limits.

FPL has the option of monitoring the UHS temperature by monitoring the temperature in the ICW system piping going to the inlet of the CCW Heat Exchangers. Monitoring the UHS temperature after the ICW but prior to CCW Heat Exchangers is considered to be equivalent to temperature monitoring before the ICW Pumps. The supply water leaving the ICW Pumps will be mixed and therefore, it will be representative of the bulk UHS temperature to the CCW Heat Exchanger inlet. The effects of the pump heating on the supply water are negligible due to low ICW head and high water volume. Accordingly, monitoring the UHS temperature after the ICW Pumps but prior to the CCW Heat Exchangers provides an equivalent location for monitoring the UHS temperature.

With the implementation of the CCW Heat Exchanger Performance Monitoring Program, the limiting UHS temperature can be treated as a variable with an absolute upper limit of 100°F without compromising any margin of safety. Demonstration of actual heat exchanger performance capability supports system operation with postulated canal temperatures greater than 100°F. Therefore, an upper TS limit of 100°F is conservative.

2.2 Proposed TS and Bases Changes

The proposed revision to TS 3/4.7.4:

LCO 3.7.4 would state:

> The ultimate heat sink shall be OPERABLE with an average supply water temperature less than or equal to 104°F**.

APPLICABILITY remains unchanged.

ACTION required remains unchanged except for the correction of a typographical error. The capitalized word 'In' before the words 'COLD SHUTDOWN' is properly reduced to lower case because it is not at the beginning of the sentence. This is an administrative change that does not alter the required action. The typographical error was introduced when FPL provided the NRC retyped pages for License Amendments 260 and 255.

Current SR 4.7.4 would be revised as follows:

> 4.7.4 The ultimate heat sink shall be determined OPERABLE:

a. At least once per 24 hours by verifying the average supply water temperature* is less than or equal to 104°F**.

SR 4.7.4.b would be added:

b. At least once per hour by verifying the average supply water temperature* is less than or equal to 104°F**, when water temperature exceeds 100°F**.

The asterisk (*) refers to a footnote that remains unchanged.

The double asterisk (**) refers to a footnote that would state:

**Instrument uncertainty shall be added to the indicated value.

Also, the wording in SRs 4.7.4.a and 4.7.4.b is revised to be consistent with the LCO when referring to the LCO limit as being 'less than or equal to.'

A mark-up of the proposed TS revision is contained in Attachment 1.

The current TS bases above will be supplemented with the following two paragraphs:

Verifying UHS water temperature at least once per 24 hours is adequate to ensure the limit of 104°F is not exceeded when the water temperature is less than 100°F. Due to daily variations in temperature, when UHS water temperature exceeds 100°F the water temperature shall be verified at least once per hour to ensure that cooling canal system temperature variations are appropriately captured thus ensuring the Technical Specification limit is not exceeded.

For the UHS water temperature monitoring Surveillance Requirements, instrument measurement uncertainty is added to the indicated value to ensure the Technical Specification limit is not exceeded.

A mark-up of the TS bases revision is contained in Attachment 2.

3.0 Discussion of Change to the Application

The Reference 1 application proposed to revise the UHS water temperature limit from 100°F to 104°F with consideration for instrument uncertainty.

The wording in SRs 4.7.4.a and 4.7.4.b is revised to be consistent with the LCO when referring to the LCO limit as being 'less than or equal to.'

A revision to new TS SR 4.7.4.b is proposed that will increase the frequency of monitoring UHS temperature when water temperature exceeds 100°F from at least once every 6 hours to at least once per hour. This increased frequency ensures that cooling canal system temperature variations are appropriately captured. The frequency is based on experience with temperature trends over the course of each day.

A new footnote (**) is added to require instrument uncertainty to be added to the indicated value of UHS water temperature for verifying compliance with the LCO.

The change to the requested revisions to TS 3/4.7.4 contained in this supplement would provide additional restrictions on the verification of UHS water temperature. These revisions to the proposed SRs do not alter the bases in the technical evaluation contained in the Reference 1 application. FPL concluded therein that safe operation of both Turkey Point units would be assured with UHS water temperature up to 104°F. The conclusion derived from those analyses remains unchanged and bounds the revised request discussed herein.

The revision to the TS changes requested in this supplement do not alter the determination of no significant hazards and the environmental considerations contained in the Reference 1 application because the revised request is bounded by the basis for change to a higher UHS temperature limit contained in the application, and the proposed changes to the TS SRs provide additional restrictions on verifying compliance with the UHS water temperature limit.

4.0 Reference

1. Florida Power & Light Company (FPL) Letter L-2014-216, "License Amendment Request No. 231, Application to Revise Technical Specifications to Revise Ultimate Heat Sink Temperature Limit," dated July 10, 2014

Enclosure 1

Attachment 1

Turkey Point Units 3 and 4

License Amendment Request No. 231- Supplement

Proposed Changes to Technical Specification 3/4.7.4

Page 3/4 7-17 Mark-Up
(one page)

PLANT SYSTEMS

3/4.7.4 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.4 The ultimate heat sink shall be OPERABLE with an average supply water temperature less than or equal to 100°F. 4

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

ACTION:

With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 12 hours and ~~In~~ COLD SHUTDOWN within the following 30 hours. This ACTION shall be applicable to both units simultaneously. i

SURVEILLANCE REQUIREMENTS

4.7.4 The ultimate heat sink shall be determined OPERABLE ~~at least once per 24 hours by verifying the average supply water temperature* to be within its limit~~.

a. At least once per 24 hours by verifying the average supply water temperature* is less than or equal to 104°F**.

b. At least once per hour by verifying the average supply water temperature* is less than or equal to 104°F**, when water temperature exceeds 100°F**.

*Portable monitors may be used to measure the temperature.

**Instrument uncertainty shall be added to the indicated value.

Enclosure 1

Attachment 2

Turkey Point Units 3 and 4

License Amendment Request No. 231- Supplement

Change to Technical Specification Bases 3/4.7.4

Mark-Up
(three pages)

ATTACHMENT 2
Technical Specification Bases
(Page 131 of 176)

3/4.7.2 Component Cooling Water System

The OPERABILITY of the Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single active failure, is consistent with the assumptions used in the safety analyses. One pump and two heat exchangers provide the heat removal capability for accidents that have been analyzed.

3/4.7.3 Intake Cooling Water System

The OPERABILITY of the Intake Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The design and operation of this system, assuming a single active failure, ensures cooling capacity consistent with the assumptions used in the safety analyses.

3/4.7.4 Ultimate Heat Sink

lower case

The ~~limit on Ultimate Heat Sink (UHS)~~ temperature in conjunction with the SURVEILLANCE REQUIREMENTS of Technical Specification 3/4.7.2 ~~will ensure that sufficient cooling~~ capacity is available either: (1) To provide normal cooldown of the facility, or (2) To mitigate the effects of accident conditions within acceptable limits.

FPL has the option of monitoring ~~the~~ UHS temperature by monitoring the temperature in the ICW System piping going to the inlet of the CCW Heat Exchangers. Monitoring ~~the~~ UHS temperature after the ICW but prior to CCW Heat Exchangers is considered to be equivalent to Pumps temperature monitoring before the ICW Pumps. The supply water leaving the ICW Pumps will be mixed and therefore, it will be representative of the bulk UHS temperature to the CCW Heat Exchanger inlet. The effects of ~~the~~ pump heating on the supply water are negligible due to low ICW head and high water volume. Accordingly, monitoring ~~the~~ UHS temperature after the ICW Pumps but prior to the CCW Heat Exchangers provides an equivalent location for monitoring ~~the~~ UHS temperature.

ATTACHMENT 2
Technical Specification Bases
(Page 132 of 176)

3/4.7.4 (Continued)

With the implementation of the CCW Heat Exchanger Performance Monitoring Program, the limiting UHS temperature can be treated as a variable with an absolute upper limit of 100°F without compromising any margin of safety. Demonstration of actual heat exchanger performance capability supports system operation with postulated canal temperatures greater than 100°F. Therefore, an upper Technical Specification limit of 100°F is conservative.

4 4 4

Insert A

3/4.7.5 Control Room Emergency Ventilation System

The OPERABILITY of the Control Room Emergency Ventilation System (CREVS) ensures that: (1) The ambient air temperature does **NOT** exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system, and (2) The Control Room envelope (CRE) will remain habitable for occupants during and following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The OPERABILITY of this system in conjunction with Control Room design provisions is based on limiting the radiation exposure to personnel occupying the CRE to 5 rem Total Effective Dose Equivalent (TEDE) for the duration of the accident. The radiological limits are consistent with the requirements of 10 CFR Part 50.67. CRE occupants are protected from chemical hazards in accordance with the limits of Regulatory Guide 1.78.

Insert A

Verifying UHS water temperature at least once per 24 hours is adequate to ensure the limit of 104°F is not exceeded when the water temperature is less than 100°F. Due to daily variations in temperature, when UHS water temperature exceeds 100°F the water temperature shall be verified at least once per hour to ensure that cooling canal system temperature variations are appropriately captured thus ensuring the Technical Specification limit is not exceeded.

For the UHS water temperature monitoring Surveillance Requirements, instrument measurement uncertainty is added to the indicated value to ensure the Technical Specification limit is not exceeded.

Enclosure 2

Turkey Point Units 3 and 4

License Amendment Request No. 231

Response to Request for Additional Information (RAI)

RAIs 1-3

Turkey Point Units 3 and 4

License Amendment Request No. 231

Response to Request for Additional Information (1-3)

Enclosure 2

By letter dated July 10, 2014, as supplemented by letter dated July 17, 2014, Florida Power & Light Company (FPL) submitted a license amendment request for the Turkey Point Nuclear Generating Unit Nos. 3 and 4 (Turkey Point). FPL requested revisions to the Turkey Point Technical Specifications (TSs), Section 3/4.7.4, "Ultimate Heat Sink."

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the information provided by FPL and determined that it needs additional information to complete the review. The NRC staff's request for additional information (RAI) was provided to FPL in Reference 1 and the FPL response to RAIs 1-3 is as follows.

NRC RAI 1

Title 10 of the *Code of Federal Regulations* (10 CFR), Paragraph 50.36(a) requires each applicant for a license to include proposed TSs as well as a summary statement of the bases or reasons for such specifications. Please provide a copy of the TS Bases associated with the proposed TSs.

FPL Response

A copy of the TS bases associated with the proposed revision to the TS is contained in Attachment 2 of Enclosure 1 in this correspondence.

NRC RAI 2

Paragraph 50.36(c)(3) of 10 CFR states that Surveillance Requirements (SRs) "assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits and that the limiting conditions for operation [LCOs] will be met." The proposed frequency for the new SR 4.7.4.b is "at least once per 6 hours when water temperature exceeds 100°F [degrees Fahrenheit]." Please provide a justification for the 6-hour frequency that demonstrates that the frequency assures that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCO will be met.

FPL Response

As discussed in Section 3.0 of Enclosure 1 in this correspondence and as shown in the marked-up TS page in Attachment 1 of Enclosure 1, the proposed increased frequency of verifying ultimate heat sink (UHS) water temperature when 100°F is exceeded is revised to at least once per hour from at least once per 6 hours. This increased frequency ensures that cooling canal system temperature variations are appropriately captured. The frequency is based on experience with temperature trends over the course of each day, and assures that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCO will be met .

NRC RAI 3

The text referring to the water temperature limit is inconsistent between the LCO 3.7.4 statement and SRs 4.7.4.a and b. The LCO statement uses the text "less than or equal to 104°F," whereas SR 4.7.4.a uses the text "its limit," and SR 4.7.4.b uses the text "the limit." Surveillance requirements assure that the LCO will be met. Therefore, please propose new text referring to the water temperature limit in the SRs that is consistent with the LCO text.

FPL Response

As discussed in Sections 2.2 and 3.0 of Enclosure 1 in this correspondence and as shown in the marked-up TS page in Attachment 1 of Enclosure 1, the wording of TS SR 4.7.4.a and 4.7.4.b are revised to be consistent with the wording of the LCO. The LCO and SRs state "...less than or equal to..." the 104°F limit.

Reference

1. Email from NRC Project Manager for Turkey Point to FPL, "Turkey Point 3 and 4 Request for Additional Information - LAR 231 (TAC MF4392 and MF4393)," dated July 18, 2014 (RAIs 1-3)