FPL

FEB 2 8 2001
L-2000-263
10 CFR 50.90
10 CFR 50.91

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

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to Request for Additional Information - Proposed License Amendments
Risk-Informed Residual Heat Removal Pump Allowed Outage Time Extension

By letter L-2000-124, dated October 30, 2000, Florida Power and Light Company (FPL) submitted a request to amend Appendix A of Facility Operating Licenses DPR-31 and DPR-41 to modify the Turkey Point Units 3 and 4 Technical Specifications (TS). The proposed amendments revise the Turkey Point Units 3 and 4 Technical Specifications, Section 3/4.5.2, ECCS Subsystems - T_{avg} Greater Than or Equal to 350° F, to extend the Residual Heat Removal (RHR) pump Allowed Outage Time (AOT) from 72 hours to 7 days to restore an inoperable RHR pump to operable status.

As a result of conversation with the NRC Staff, additional information was requested to complete the review of the proposed amendments. Attachments 1 and 2 provide the additional information requested.

FPL has determined that the additional information provided herein does not change the conclusions reached in the original no significant hazards consideration determination provided in FPL letter L-2000-124. 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, please contact Craig Mowrey at (305) 246-6204.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

Attachments
Enclosure

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant
Florida Department of Health

A001

L-2000-263

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
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Risk-Informed Residual Heat Removal Pump
Allowed Outage Time Extension

STATE OF FLORIDA)
) ss.
COUNTY OF MIAMI-DADE)

R. J. Hovey being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

R. J. Hovey

Subscribed and sworn to before me this 5th day of February, 2001.

CHERYL A. STEVENSON
NOTARY PUBLIC - STATE OF FLORIDA
COMMISSION # CC929976
EXPIRES 6/19/2004
BONDED THRU ASA 1-888-NOTARY1

Cheryl A Stevenson (Notary Stamp on File)
Name of Notary Public (Type or Print)

R. J. Hovey is personally known to me.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Question 1:

Is implementation of CRMP (Configuration Risk Management Program) a formal commitment by FP&L for the RHR AOT extension?

Response:

Our commitment to implementing the maintenance rule [10CFR50.65(a)(4)] is considered to be equivalent to implementation of CRMP referred to in the submittal. Implementation of 10CFR50.65(a)(4) is complete.

Question 2:

Do you have a shutdown PRA? If so, what is the CDF difference if there are two operable RHR pumps rather than only one? In other words, does two buy you a lot, or do you have other means of cooling with or without the head on the vessel that can be credited in a shutdown PRA?

Response:

No, FPL does not have a shutdown PRA. Other means of cooling the core are available given a loss of Residual Heat Removal (RHR) cooling, depending on whether the head is on or off the reactor vessel. If the head is bolted to the reactor vessel, the options include establishing secondary cooling (Auxiliary Feedwater if steam is available, steam generator bleed and feed if not), and Refueling Water Storage Tank (RWST) injection using High Head Safety Injection (HHSI) pumps or charging pumps. If the reactor vessel head is removed, the options include RWST injection using HHSI pumps or charging pumps, and gravity feed from the RWST to the core.

Although the proposed amendments would change only the RHR pump requirements in Modes 1 through 3 (when Reactor Coolant System temperature is at or above 350 degrees), Turkey Point technical specifications also require RHR pumps to be operable and/or operating in other modes. Enclosure 1 contains copies of other Turkey Point technical specifications which require RHR pumps or loops.

Question 3:
What is your recent (last three years) experience (w.r.t. reliability and availability) with the RHR pump and the LPSI system function?

Response:

As agreed verbally, Attachment 2 contains quarterly NRC Performance Indicator data for the RHR system, covering 1Q1998 through 4Q2000.

Question 4:

What is your justification for not addressing at least qualitatively external event problems with the AOT extension? We need to at least walk through fires, hurricanes, and tornadoes? Just because the IPEEE did not show any external event vulnerabilities does not mean that the extension may not make a difference.

Response:

Turkey Point has had unique experience regarding external events, specifically Hurricane Andrew, which resulted in an extended loss of offsite power event. During and after this event, the Turkey Point units were maintained at Hot Shutdown (Mode 4), and not cooled down to Cold Shutdown (Mode 5) conditions. This was purposely done in order to maintain secondary cooling capability. Following that event, this philosophy was incorporated into Turkey Point's hurricane preparation procedure.

Turkey Point's RHR pumps are below grade, in reinforced concrete, missile-protected stuctures, and are not considered to be vulnerable to tornadoes.

Turkey Point's PSA models did not include an assessment of the potential risk due to internal fires and external events. The Turkey Point response to GL 88-20, Supplement 4 ("Individual Plant Examination of External Events for Severe Accident Vulnerabilities" [IPEEE]) concluded that there were no severe accident vulnerabilities due to internal fires and external events; however, in order to investigate the risk associated with a proposed EDG AOT extension, the following tasks were performed by FPL personnel and an industry expert on Fire PRA:

- a plant walkdown of the control room and cable spreading room,
- a review of prior fire risk evaluation information and conservatisms, and
- a revision of the Control Room and Cable Spreading Room fire risk as described in the Turkey Point IPEEE submittal.

The results of the revised assessment indicate that the overall risk posed by control room fires and cable spreading room fires was overestimated in the original IPEEE.

The RHR pumps, High Head Safety Injection pumps, and charging pumps are not only in separate fire zones, but are separated by 3-hour rated fire barriers, i.e., there is little chance of any single fire taking out some combination of these three sets of pumps.

Fire Zone	Description	Fire Area	Pumps
12	RHR PUMP 3A ROOM	B	3P210A
13	RHR PUMP 3B ROOM	B	3P210B
15	RHR PUMP 4A ROOM	C	4P210A
16	RHR PUMP 4B ROOM	C	4P210B
52	SAFETY INJECTION PUMPS	BBB	4P215A, 4P215B
53	SAFETY INJECTION PUMPS	BBB	3P215A, 3P215B
55	CHARGING PUMP ROOM	O	3P201A, 3P201B, 3P201C
45	CHARGING PUMP ROOM	N	4P201A, 4P201B, 4P201C

Section III.G.1 of Appendix R to 10CFR50 requires that fire protection features ... be capable of limiting fire damage so that:
a. One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) is free of fire damage; and
b. Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) can be repaired within 72 hours.

Turkey Point's RHR system is not required to achieve Hot Shutdown. In addition if while an RHR pump is inoperable, a fire occurs which renders the other RHR pump inoperable, efforts will be made to restore one of the RHR pumps within the required 72 hours. If these efforts take longer than 72 hours, the delay in reaching cold shutdown is still not safety significant.

For these reasons, FPL believes that any potential impact the proposed RHR pump AOT extension might have on the risk due to internal fires and external events would be very small and remain well below the acceptance criteria as stated in Reference Reg. Guide 1.177.

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Attachment 2

NRC Performance Indicator Data
for RHR Pumps

Turkey Point Unit 3

Mitigating Systems
Cornerstone

Safety System Unavailability (SSU), Residual Heat Removal System

Number of Trains: 2

Train 1	1Q/98	2Q/98	3Q/98	4Q/98	1Q/99	2Q/99	3Q/99	4Q/99	1Q/00	2Q/00	3Q/00	4Q/00
Planned Unavailable Hours	0.7	1	1.1	0	0.5	0.5	0.6	0.5	0.5	15	3.4	1.92
Unplanned Unavailable Hours	0	0	4.4	0	0	0	0	0	0	0	0	0
Fault Exposure Unavailable Hours	0	0	0	0	0	0	0	0	0	0	0	0
Hours Unavailable (quarter)	0.7	1	5.5	0	0.5	0.5	0.6	0.5	0.5	15	3.4	1.92
Total Hours Unavailable							20.5	20.3	19.4	25.8	28.7	30.12
Hours Train Required for Service	2160	2183	2208	1742	2160	2183	2208	2209	1932.4	2183	2208	2209

Train 2	1Q/98	2Q/98	3Q/98	4Q/98	1Q/99	2Q/99	3Q/99	4Q/99	1Q/00	2Q/00	3Q/00	4Q/00
Planned Unavailable Hours	0.6	1.9	2.5	0	0.5	0.6	0.6	5.5	0.5	0.4	17.9	1.75
Unplanned Unavailable Hours	0	0	0	10.5	0	0	0	0	0	0	0	0
Fault Exposure Unavailable Hours	0	0	0	0	0	0	0	0	0	0	0	0
Hours Unavailable (quarter)	0.6	1.9	2.5	10.5	0.5	0.6	0.6	5.5	0.5	0.4	17.9	1.75
Total Hours Unavailable							79.56	85	81.1	25	42.2	43.25
Hours Train Required for Service	2160	2183	2208	1742	2160	2183	2208	2209	1932.4	2183	2208	2209

			3Q/99	4Q/99	1Q/00	2Q/00	3Q/00	4Q/00
Indicator Value			0.2%	0.2%	0.2%	0.1%	0.1%	0.1%

Turkey Point Unit 4

Mitigating Systems Cornerstone

Safety System Unavailability (SSU), Residual Heat Removal System

Number of Trains: 2

Train 1	1Q/98	2Q/98	3Q/98	4Q/98	1Q/99	2Q/99	3Q/99	4Q/99	1Q/00	2Q/00	3Q/00	4Q/00
Planned Unavailable Hours	0.7	11.3	0.7	5.3	0.8	0.9	0.7	0.7	0.9	0.3	13.6	0.85
Unplanned Unavailable Hours	0	0	0	0	0	56.5	0	0	0	0	0	0
Fault Exposure Unavailable Hours	0	0	0	0	0	0	0	0	0	0	0	0
Hours Unavailable (quarter)	0.7	11.3	0.7	5.3	0.8	57.4	0.7	0.7	0.9	0.3	13.6	0.85
Total Hours Unavailable							83	82.9	82.9	82.4	93.1	93.25
Hours Train Required for Service	2160	2183	2208	2209	1940	2159	2208	2209	2184	2183	2208	2021

Train 2	1Q/98	2Q/98	3Q/98	4Q/98	1Q/99	2Q/99	3Q/99	4Q/99	1Q/00	2Q/00	3Q/00	4Q/00
Planned Unavailable Hours	0.7	3	0.6	1	6	10	0.6	2	1	0.3	59.55	0.33
Unplanned Unavailable Hours	0	0	0	0	0	0	0	0	0	0	0	0
Fault Exposure Unavailable Hours	0	0	0	0	0	0	0	0	0	0	0	0
Hours Unavailable (quarter)	0.7	3	0.6	1	6	10	0.6	2	1	0.3	59.55	0.33
Total Hours Unavailable							94.1	95.3	95.6	95.4	85.45	85.08
Hours Train Required for Service	2160	2183	2208	2209	1940	2159	2208	2209	2184	2183	2208	2021

			3Q/99	4Q/99	1Q/00	2Q/00	3Q/00	4Q/00
Indicator Value			0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

Enclosure 1

Other Turkey Point Technical Specification Pages Requiring RHR

HOT SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.4.1.3 At least two of the loops listed below shall be OPERABLE and at least one of these loops shall be in operation:*

a. Reactor Coolant Loop A and its associated steam generator and reactor coolant pump,**

b. Reactor Coolant Loop B and its associated steam generator and reactor coolant pump,**

c. Reactor Coolant Loop C and its associated steam generator and reactor coolant pump,**

d. RHR Loop A, and

e. RHR Loop B.

APPLICABILITY: MODE 4.

ACTION:

a. With less than the above required loops OPERABLE, immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible; if the remaining OPERABLE loop is an RHR loop, be in COLD SHUTDOWN within 24 hours.

b. With no loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required loop to operation.

*All reactor coolant pumps and RHR pumps may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

**A reactor coolant pump shall not be started with one or more of the Reactor Coolant System cold leg temperatures less than or equal to 275°F unless the secondary water temperature of each steam generator is less than 50°F above each of the Reactor Coolant System cold leg temperatures.

COLD SHUTDOWN - LOOPS FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.1 At least one residual heat removal (RHR) loop shall be OPERABLE and in operation*, and either:

a. One additional RHR loop shall be OPERABLE**, or

b. The secondary side water level of at least two steam generators shall be greater than 10%.

APPLICABILITY: MODE 5 with reactor coolant loops filled***.

ACTION:

a. With one of the RHR loops inoperable or with less than the required steam generator water level, immediately initiate corrective action to return the inoperable RHR loop to OPERABLE status or restore the required steam generator water level as soon as possible.

b. With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.1.1 The secondary side water level of at least two steam generators when required shall be determined to be within limits at least once per 12 hours.

4.4.1.4.1.2 At least one RHR loop shall be determined to be in operation and circulating reactor coolant at least once per 12 hours.

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*The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

**One RHR loop may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE.

***A reactor coolant pump shall not be started with one or more of the Reactor Coolant System cold leg temperatures less than or equal to 275°F unless the secondary water temperature of each steam generator is less than 50°F above each of the Reactor Coolant System cold leg temperatures.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN - LOOPS NOT FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.2 Two residual heat removal (RHR) loops shall be OPERABLE* and at least one RHR loop shall be in operation.**

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

a. With less than the above required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible.

b. With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.2 At least one RHR loop shall be determined to be in operation and circulating reactor coolant at least once per 12 hours.

*One RHR loop may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE.

**The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

3/4.5.3 ECCS SUBSYSTEMS - T_{avg} LESS THAN 350°F

LIMITING CONDITION FOR OPERATION

3.5.3 As a minimum, the following ECCS components and flow path shall be OPERABLE:

a. One OPERABLE RHR heat exchanger,

b. One OPERABLE RHR pump, and

c. An OPERABLE flow path capable of (1) taking suction from the refueling water storage tank upon being manually realigned and (2) transferring suction to the containment sump during the recirculation phase of operation.

APPLICABILITY: MODE 4.

ACTION:

a. With no OPERABLE ECCS flow path from the refueling water storage tank, restore at least one ECCS flow path to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next 24 hours.

b. With either the residual heat removal heat exchanger or RHR pump inoperable, restore the components to OPERABLE status or maintain the Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods.

c. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date since January 1, 1990.

SURVEILLANCE REQUIREMENTS

4.5.3 The above ECCS components shall be demonstrated OPERABLE per the applicable requirements of Specification 4.5.2.

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

HIGH WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one residual heat removal (RHR) loop shall be OPERABLE and in operation.*

APPLICABILITY: MODE 6, when the water level above the top of the reactor vessel flange is greater than or equal to 23 feet.

ACTION:

With no RHR loop OPERABLE and in operation, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to OPERABLE and operating status as soon as possible. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.1.1 At least one RHR loop shall be verified in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm at least once per 12 hours.

4.9.8.1.2 The RHR flow indicator shall be subjected to a CHANNEL CALIBRATION at least once per 18 months.

*The required RHR loop may be removed from operation for up to 1 hour per 8 hour period, provided no operations are permitted that would cause reduction of the Reactor Coolant System boron concentration.

REFUELING OPERATIONS

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two independent residual heat removal (RHR) loops shall be OPERABLE, and at least one RHR loop shall be in operation.

APPLICABILITY: MODE 6, when the water level above the top ~~of the~~ reactor vessel flange is less than 23 feet.

ACTION:

a. With less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status, or to establish greater than or equal to 23 feet of water above the reactor vessel flange, as soon as possible.

b. With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to operation. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.2 At least one RHR loop shall be verified in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm at least once per 12 hours.