



FEB 22 2011
L-2011-027
10 CFR 50.90

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 (RAI) Regarding
Extended Power Uprate (EPU) License Amendment Request (LAR) No. 205
and Fire Protection Issues

References:

- (1) M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request No. 205: Extended Power Uprate (EPU)," (TAC Nos. ME4907 and ME4908), Accession No. ML103560169, October 21, 2010.
- (2) Email from J. Paige (NRC) to T. Abbatiello (FPL), "Turkey Point EPU - Fire Protection (AFPB) Request for Additional Information - Round 1," February 2, 2011.

By letter L-2010-113 dated October 21, 2010 [Reference 1], Florida Power and Light (FPL) requested to amend Facility Operating Licenses DPR-31 and DPR-41 and revise the Turkey Point Units 3 and 4 Technical Specifications (TS). The proposed amendment will increase each unit's licensed core power level from 2300 megawatts thermal (MWt) to 2644 MWt and revise the Renewed Facility Operating Licenses and TS to support operation at this increased core thermal power level. This represents an approximate increase of 15% and is therefore considered an extended power uprate (EPU).

By email from the U.S. Nuclear Regulatory Commission (NRC) Project Manager (PM) dated February 2, 2011 [Reference 2], additional information regarding Fire Protection issues was requested by the NRC staff in the Fire Protection Branch (AFPB) to support their review of the EPU LAR. The RAI consisted of five (5) questions regarding procedure and resource impacts, modification impacts, operator manual actions, and potential uses of the fire protection system resources for non-fire-suppression activities. These five RAI questions and the applicable FPL responses are documented in the Attachment 1 to this letter.

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

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2010-113 [Reference 1].

This submittal contains no new commitments and no revisions to existing commitments.

Should you have any questions regarding this submittal, please contact Mr. Robert J. Tomonto, Licensing Manager, at (305) 246-7327.

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LRR

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

Executed on February 22, 2011.

Very truly yours,



Michael Kiley
Site Vice President
Turkey Point Nuclear Plant

Attachments

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

Turkey Point Units 3 and 4

RESPONSE TO NRC RAI REGARDING EPU LAR NO. 205
AND AFPB FIRE PROTECTION ISSUES

ATTACHMENT 1

Response to Request for Additional Information

The following information is provided by Florida Power & Light (FPL) in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support License Amendment Request (LAR) No. 205, Extended Power Uprate (EPU), for Turkey Point Nuclear Plant (PTN) Units 3 and 4 that was submitted to the NRC by FPL letter L-2010-113 on October 21, 2010 [Reference 1].

In an email dated February 2, 2011 [Reference 2], the NRC staff requested additional information regarding FPL's request to implement the Extended Power Uprate. The RAI consisted of five (5) questions from the NRC's Fire Protection Branch (AFPB) regarding procedure/resource impacts, modification impacts, operator manual actions, and potential uses of the fire protection system resources for non-fire-suppression activities. These five RAI questions and the applicable FPL responses are documented below.

AFPB-1.1 Attachment 1 to Matrix 5 ("Supplemental Fire Protection Review Criteria, Plant Systems"), of Nuclear Reactor Regulation (NRR) RS-001, Revision 0, Review Standard for Extended Power Uprates (EPU), states that "power uprates typically result in increases in decay heat generation following plant trips. These increases in decay heat usually do not affect the elements of a fire protection program related to (1) administrative controls, (2) fire suppression and detection systems, (3) fire barriers, (4) fire protection responsibilities of plant personnel, and (5) procedures and resources necessary for the repair of systems required to achieve and maintain cold shutdown. In addition, an increase in decay heat will usually not result in an increase in the potential for a radiological release resulting from a fire. However, the licensee's, LAR should confirm that these elements are not impacted by the extended power uprate."

The staff notes that license amendment request (LAR), Attachment 4, to L-2010-113, "Licensing Report," Section 2.5.1.4.2.3, on page 2.5.1.4-3, specifically addresses only items (1) through (4) above. The staff requests that the licensee provide statements to address item (5).

On page 2.5.1.4-4 of Licensing Report (LR) Subsection 2.5.1.4.2.3.1 under "Cold Shutdown Repair Fire Protection Procedures and Resources" it states "PTN's Safe Shutdown Analysis (SSA) takes no credit for post fire repair of cold shutdown equipment, except for the replacement of fuses. This does not change due to EPU." However, further review indicates PTN's SSA does identify one action which could be classified as a "repair". This repair would be the refilling of the 3B diesel generator day tank from an offsite fuel source for a fire in the Unit 3 Emergency Diesel Generator Oil Storage Tank and surrounding berm area (Fire Zone 90). A fire in this zone could not only affect the diesel oil storage tank for Unit 3 but also the Unit 3 Diesel Oil Transfer Pump Common Header Cross Connect Isolation Valves (manual valves 3-70-392A and 3-70-392B, located inside the diesel oil storage tank berm). A fire in Fire Zone 90 which could damage all of these components would prevent refilling of the 3B diesel generator day tank by any other means other than by a fuel truck. The 3B diesel generator day tank is sized to provide fuel for 22.5 hours at rated load. The extended power uprate does not

affect the size or minimum technical specification level of the 3B diesel generator day tank, the rated power of the 3B diesel generator, or the manning available or required to support fuel truck refueling operations.

Therefore, the procedures and resources necessary for the “repair” of systems required to achieve and maintain cold shutdown are not changed.

AFPB-1.2 LAR, Attachment 4, to L-2010-113, Section 2.5.1.4.2.3.1, on page 2.5.1.4-4, states that, “...*The impact of plant modifications being implemented in support of EPU on Fire Protection Program will be addressed in accordance with the Plant Change/Modification process...*”

It is unclear to the NRC staff whether there are fire protection program plant modifications planned (e.g., adding new cable trays, or re-routing of existing cables, or increases in combustible loading affecting fire barrier ratings, or changes to administrative controls) at EPU conditions. Clarify whether this request involves plant modifications, or changes to the fire protection program, including any proposed modifications to implement transition to Title 10 “Energy” of the *Code of Federal Regulations* (10 CFR) 50.48(c). If any, the staff requests the licensee to identify proposed modifications and discuss the impact of these modifications on the plant’s compliance with the fire protection program licensing basis, 10 CFR 50.48, or applicable portions of 10 CFR 50, Appendix R.

There are no EPU plant modifications, or changes to the fire protection program, that adversely affect or support proposed modifications to implement transition to 10 CFR 50.48(c) (i.e., NFPA 805).

There are several modifications being implemented for EPU that will result in minor changes to the current fire protection program features. These changes include changes to combustible loadings as a result of replacement pump motors and addition of cabling. Potential changes in fire loading are evaluated in accordance with the engineering change process to assure continued compliance with the site’s fire protection program licensing basis.

Upgrade of the main transformer coolers for EPU necessitates a change to the fire protection system. These changes include redesign of the deluge system piping and relocation of heat detectors. The cooler upgrade also results in a slight increase in combustible loading due to the increase in cooler oil quantity. The changes to the deluge piping, heat detectors and combustible loading have been evaluated and meet current fire protection program requirements.

Modification of the isophase bus duct for EPU requires changes to the main transformer, auxiliary transformer, and hydrogen seal oil deluge systems. These changes include deluge piping rerouting, material upgrades, and replacement of the heat actuated devices. Changes to these deluge systems have been evaluated and meet current fire protection program requirements.

Other plant changes impacting the safe shutdown analysis and fire protection program elements including administrative controls, fire suppression and detection systems, fire barriers, fire protection responsibilities of plant personnel, cold shutdown repair

fire protection procedures and resources, fire hazard analysis and primary coolant interfaces are evaluated in accordance with the engineering change process to assure continued compliance with the plant's fire protection program licensing basis. The EPU modifications will not reduce the effectiveness of fire protection for facilities, systems, and equipment that could result in a radiological hazard and will not adversely affect the capability of existing fire protection features and safe-shutdown following a fire. The EPU modifications will not result in adverse changes to the fire protection program's compliance with 10CFR50.48, or post-fire safe-shutdown capability.

- AFPB-1.3** The NRC staff notes that Attachment 4 to L-2010-113, Section 2.5.1.4.2.3.2, on page 2.5.1.4-8, "Time Critical Manual Action Evaluation," identifies some additional Fire Zones 84 and 106 requiring operator manual actions as a result of EPU. Section III.G.3 of Appendix R addresses alternative or dedicated shutdown capability independent of the fire area of origin and establishes a series of requirements to achieve and maintain safe shutdown capability. The NRC staff requests the licensee to confirm the compliance strategy for Fire Zones 84 and 106 is Appendix R, Section III.G.3.

The compliance strategy for Fire Zone 106 (main control room) is III.G.3. The compliance strategy for Fire Zone 84 (Unit 3 and Unit 4 Auxiliary Feedwater Pump Area) is not III.G.3. Though Fire Zone 84 uses compliance strategy III.G.2 versus III.G.3, no additional operator manual actions were identified as a result of the EPU. The identified operator manual actions were already part of the Turkey Point fire safe shutdown analysis. These existing manual actions are covered by the enforcement discretion provided by Turkey Point's transition to an NFPA 805 licensing basis. The thermal-hydraulic analyses performed for EPU demonstrated that sufficient time remains available to satisfy requirements for all actions taken in the Turkey Point safe shutdown analysis, given the post-EPU plant conditions (i.e., actions are still feasible).

- AFPB-1.4** The NRC staff notes that Attachment 4 to L-2010-113, Section 2.5.1.4.2.3.2, on page 2.5.1.4-9, "Time Critical Manual Action Evaluation," states that "*...Prior to EPU, the PORV is required to be closed before leaving the Control Room and are verified closed from the Alternate Shutdown panel (ASP) within 15 minutes. Opening of these PORV breakers will be additional actions added to an already assigned position and are to be completed within 5 minutes at the local DC panel...*"

The NRC staff requests the licensee to discuss why opening of PORV breakers, which will be additional actions added to an already assigned staff position requiring completion within 5 minutes at the local DC panel, should be considered acceptable.

The decision to add the actions to open additional DC breakers was made based on a qualitative risk versus gain evaluation of the plant parameters, independent of extended power uprate evaluations. The decision was made because the actions (a) provide defense-in-depth for the mitigation of this potential spurious operation without hindering safe shutdown and (b) the opening of two additional DC breakers in distribution panels accessed by the procedure has little impact on the timing,

training, and reliability of the existing procedure. The existing plant actions to close the PORV block valve prior to control room evacuation and isolate PORV and PORV block valve control circuits within 15 minutes at the alternate shutdown panel meets regulatory requirements and provides adequate assurance that core damage will not occur following the Turkey Point extended power uprate.

Generic Letter 86-10, Section 3.8.4 (Control Room Fire Considerations), allows plants to take actions in the control room prior to evacuation. These actions require assurance that they could not be negated by subsequent spurious actuation signals resulting from the postulated fire. PTN's control room evacuation procedure identifies actions to be taken (if possible) prior to leaving the control room (including closing the PORV block valves to isolate the PORV flowpath). The procedure also directs actions at the alternate shutdown panel to isolate PORV and PORV block valve circuitry from the area with the fire. Though these actions satisfy the requirements imposed by the generic letter, the actions to open DC breakers at the local distribution panel provide additional assurance that the existing plant procedure will prevent the control room action from being negated by spurious operation of the PORV until actions are performed at the alternate shutdown panel.

AFPB-1.5 Some plants credit aspects of their fire protection system for other than fire protection activities, e.g., utilizing the fire water pumps and water supply as backup cooling or inventory for non-primary reactor systems. If Turkey Point Units 3 and 4, credits its fire protection system in this way, the LAR should identify the specific situations and discuss to what extent, if any, the extended power and measurement uncertainty recapture uprates affect these "non-fire-protection" aspects of the plant fire protection system. If Turkey Point Units 3 and 4 does not take such credit, the NRC staff requests that the licensee verify this as well.

In your response discuss how any non-fire suppression use of fire protection water will impact the need to meet the fire protection system design demands.

Turkey Point Units 3 and 4 do not use or credit fire water pumps or dedicated supply for non-fire protection functions during normal plant operations. However, during off-normal or emergency conditions, Turkey Point Units 3 and 4 does use fire water for make up to the Condensate Storage Tank, Refueling Water Storage Tank, Containment, and Spent Fuel Pools. Procedural guidance is provided to ensure the fire system remains capable of responding to a fire if applicable. Provisions for using fire water for off-normal or emergency evolutions are not changed as a result of EPU.

References

1. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request No. 205: Extended Power Uprate (EPU)," (TAC Nos. ME4907 and ME4908), Accession No. ML103560169, October 21, 2010.
2. Email from J. Paige (NRC) to T. Abbatiello (FPL), "Turkey Point EPU - Fire Protection (AFPB) Request for Additional Information - Round 1," February 2, 2011.