



JUL 12 2006

L-2006-160
10 CFR 50.12
10 CFR 50.48
10 CFR Part 50 Appendix R

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

Subject: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to Request for Additional Information
For Request for Exemption -
Automatic Suppression in the Mechanical Equipment
Room (Fire Zone 097) and Control Room Roof (106R)

By letter L-2004-176 dated December 27, 2004, Florida Power & Light Company (FPL) requested an exemption from the requirements of 10 CFR Part 50 Appendix R Section III.G.3 for automatic suppression in the Mechanical Equipment Room (Fire Zone 097) and for suppression and detection in the subsection of the Control Building Roof that contains the Control Room Roof (Fire Zone 106R) at Turkey Point. The exemption request was supplemented by FPL letter L-2005-089 dated May 23, 2005.

Based on conversations with NRC Staff on May 23, 2006, and June 9, 2006, additional information was requested to complete the review of the exemption request. The attachment to this letter provides the additional information requested.

Please contact Walter Parker at (305) 246-6632, if there are any questions.

Very truly yours,

A handwritten signature in cursive script that reads "Terry O'Dones".

Terry O'Dones
Vice President
Turkey Point Nuclear Plant

Attachment

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point

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Response To Request For Additional Information
Exemption Request For Turkey Point Units 3 And 4
Mechanical Equipment Room (Fire Zone 097) and Control Room Roof (106R)

By letter L-2004-176 dated December 27, 2004, Florida Power & Light Company (FPL) submitted a request for exemption from automatic suppression in the Mechanical Equipment Room (Fire Zone 097) and exemption from automatic suppression and detection in the Control Building Roof (Fire Zone 106R). The exemption request was supplemented by FPL letter L-2005-089 dated May 23, 2005. Based on conversations with NRC Staff on May 23, 2006, and June 9, 2006, additional information was requested to complete the review of the exemption request. The specific requests and responses are itemized below:

- a. **FPL stated in L-99-021 attachment (page 4 of 4) that three portable extinguishers on the turbine deck (FZ117) near the roof access stairs and three near the stairs at the mezzanine level (FZ105) provide primary fire protection for the Control Building Roof. For the fire extinguishers used for fire suppression in Fire Zone 097 and Fire Zone 106R, provide the location and number of fire extinguishers and indicate that the UFSAR lists of fire extinguishers will be updated as necessary.**

The following fire extinguishers provide the primary means for manual fire suppression for Fire Zone 097:

EX-04-27 Mounted on the Cable Spreading Room West wall (inside) at El. 30'
EX-04-26 Mounted in MG Set Room at El. 30"
EX-04-28 Mounted on Cable Spreading Room West wall (outside) at El. 30'
EX-04-11 Mounted on handrail outside Cable Spreading Room at El. 30'

These are listed in UFSAR Table 9.6A-4 and correspond to the description under 4.MM.1.3.4c on Page 9.6A-228. As such, no UFSAR change is required.

The following fire extinguishers provide the primary means for manual fire suppression for Fire Zone 106R:

EX-04-28 Mounted on Cable Spreading Room wall (outside) at El. 30'
EX-04-10 Mounted on Switchgear Building wall at El. 30'
EX-04-11 Mounted on handrail outside Cable Spreading Room at El. 30'
EX-04-22 Mounted by Operator Shack at El. 42'
EX-04-17 Mounted on handrail by stairs to U4 Steam Platform at El. 42'
EX-04-16 Mounted on handrail by stairs to U4 Steam Platform at El. 42'

These are listed in UFSAR Table 9.6A-4 but they do not correspond with the description under 4.MM.3.3.4c on Page 9.6A-230. A UFSAR change package has been prepared accordingly to reference the three extinguishers at El. 42' and three extinguishers at El. 30' along with the five indicated as being in the Control Room.

- b. **UFSAR Page 9.6A-230 does not list the combustible loading related to the Control Building Roof. Provide a discussion to address that the loading is not negligible but is not significant. Also, state that no separate calculation or analysis was done to determine the combustibility of the tar material but that the separation requirements in the exemption for Section III.G.2 will continue to be maintained even though the previous exemption is superseded by this request.**

UFSAR Appendix 9.6A Section 4.XX.1.2 indicates a significant combustible load in outdoor areas is equivalent to 200 gallons of combustible liquid (68 million Btus).

Page 21 of Specification 5610-C-54 (Enclosure 1 to FPL letter L-99-021) describes the following application of combustible material:

Felt	60#
Pitch 4 moppings	125#
pourings	<u>75#</u>
Total	260 lbs/100ft ²

UFSAR Table 9.6A-13 lists various combustible commodities. No separate calculation or analysis was done to determine combustibility of the built-up roofing materials. However, as most of the petroleum-based materials have a specific heat of 20,000 Btu/lb, this is a reasonable value to characterize the tar and felt materials.

The Btu loading of the built-up roofing is 52,000 Btu/ft² (= 20,000 Btu/lb x 260 lbs/100ft²)

At this rate, over 1300 ft² of built-up roofing surface area would be required for the loading to be significant (i.e., exceed 68 million Btus). The surface area of built-up roofing in the Control Building Roof is approximately 640 ft².

Although the composite of built-up roofing materials is not a significant combustible load, it is not necessarily negligible. Therefore, a UFSAR change package has been prepared to reflect the combustible loading of the built-up roofing material in Fire Zone 106A. In addition, the separation requirements in the exemption for Section III.G.2 will continue to be maintained even though the previous exemption is superseded by this request.

- c. **For a fire in Fire Zone 106R, provide a statement to the effect of identifying that the worst-case scenario would be bounded by the Station Blackout Event, which ensures a minimum of greater than 30 minutes is provided before a loss of Control Room habitability.**

Reference to the Station Blackout (SBO) event was made during a conference call. In terms of Control Room habitability, FPL indicated an expectation that the effect of losing Control Room cooling and ventilation during a SBO event would bound loss-of-Control Room cooling from fire in Fire Zone 106R and that the duration of habitable conditions would be at least 30 minutes.

In follow-up to the conference call, FPL reviewed the Station Blackout (SBO) and Loss of Offsite Power (LOOP) scenarios for Turkey Point. The Control Room Air Conditioning (CRAC) is automatically loaded onto an EDG with little time delay. As such, the SBO and LOOP scenarios do not necessarily bound a Fire Zone 106R fire scenario regarding Control Room

heat-up. However, Control Building heat-up has been analyzed for different fire scenarios. Although none directly analyzed the complete loss of CRAC, other individual rooms in the Control Building were reviewed for complete loss of HVAC for one hour. Results show that bulk ambient temperatures remain below 104°F during the first hour of the event without compensatory cooling. This includes the Computer Room, which is considered a reasonable representative of Control Room sensible heat and room volume. Therefore, it can reasonably be concluded that the Control Room would remain habitable for 30 minutes to 1 hour following a loss of the CRAC due to a fire in Fire Zone 106R.

In addition, Fire Zone 106R contains only the condensing units for the CRAC. Air handling units and circuits are not in this zone so ventilation is not impacted. Also, no credible fire is expected to result in total loss of Control Room cooling because the combustible loading from the built-up roofing is not significant, spatial separation between condensing units, and scarcity of ignition sources in the area. Although a significant fire in this zone may require Control Room evacuation in accordance with Procedure 0-ONOP-105, no time requirement to initiate evacuation is provided and the decision to evacuate would be based on the Shift Manager discretion. If a smaller fire were to damage the condensing units, evacuation may eventually be required based on elevated temperature environment in the control room. No time requirement is associated with any actions for a fire in Fire Zone 106R.

Based on the preceding, no credible fire in Fire Zone 106R is expected to result in total loss of Control Room cooling or ventilation. If a total loss of Control Room cooling were to occur, it is expected that the Control Room would remain habitable for at least 30 minutes into the fire scenario.