February 2, 2001

Mr. Thomas F. Plunkett
President - Nuclear Division
Florida Power & Light Company
P. O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE TURKEY POINT, UNITS 3 AND 4, LICENSE RENEWAL APPLICATION

Dear Mr. Plunkett:

By letter dated September 8, 2000, Florida Power and Light (FPL), submitted for the Nuclear Regulatory Commission's (NRC) review an application pursuant to 10 CFR Part 54, to renew the operating license for Turkey Point Nuclear Plant, Units 3 and 4. The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete its safety review. Specifically, the enclosed questions relate to Section 3.4 "Auxiliary Systems."

Please provide a schedule by letter, electronic mail, or telephonically for the submittal of your response within 30 days of the receipt of this letter. Additionally, the staff would be willing to meet with FPL prior to the submittal of the response to provide clarification of the staff's request for additional information.

Sincerely,

/RA/

Rajender Auluck, Senior Project Manager
License Renewal and Standardization Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-250 and 50-251

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION
TURKEY POINT, UNITS 3 AND 4

Section 3.4 Auxiliary Systems - General

RAI 3.4-1: In Section 5.4 of Appendix C, the applicant stated that the loss of mechanical closure integrity is an aging effect associated with bolted mechanical closures that can result from the loss of preload due to cyclic loading, gasket creep, thermal or other effects, cracking, or loss of bolting material. The applicant further stated that the effects of these mechanisms are the same as that of a degraded gasket. The applicant also stated that with the exception of the situation where a gasket/seal is utilized to provide a radiological boundary/barrier, the aging mechanisms associated with loss of preload are not considered to require management for non-class 1 components during the period of extended operation. However, loss of mechanical closure integrity resulted from loss of preload may result in the loss of pressure boundary integrity. Justify why the loss of mechanical closure integrity that may result in the loss of pressure boundary integrity is not a concern for the applicable bolted mechanical closures in auxiliary systems and how the system pressure boundary integrity is maintained.

RAI 3.4-2: Several ventilation systems included in Section 3.4 of the LRA contain flexible connectors (rubber, neoprene, or coated canvas materials). The ductwork in the HVAC system typically includes isolators (such as flexible connectors between ducts and fans) to prevent transmission of vibration and dynamic loading to the rest of the system. Those isolators may degrade (e.g., hardening and cracking) because of relative motion between vibrating equipment, warm moist air, temperature changes, oxygen, and radiation. In Section 5.2 of Appendix C, the applicant stated that embrittlement is an aging mechanism that could cause cracking of rubber, neoprene, or coated canvas materials. To manage that aging effect, the applicant relies on the visual inspection included in two aging management programs, periodic surveillance and preventive maintenance program, and systems and structures monitoring program described in Appendix B Sections 3.2.11 and 3.2.15 respectively, of the LRA. Neither program provides a description of the inspection schedule (frequency). Describe the frequency of the subject visual inspections. Demonstrate the adequacy of that inspection frequency and the method to ensure that aging degradation will be detected before there is a loss of intended functions.

RAI 3.4-3: The boric acid wastage surveillance program provides for visual inspection of external surfaces for evidence of corrosion, cracking, leakage, fouling, or coatings damage. For the following systems: the intake cooling water system, the spent fuel pool cooling system, and the primary water makeup system, provide details specific to of the location of the bolts and the most recent operating history supporting the adequacy of this program in managing the loss of mechanical closure for the carbon steel bolts which are exposed externally to borated water leaks.

RAI 3.4-4: Provide the bases for the determination of corrosion rates and for the techniques which will be used in the galvanic corrosion susceptibility inspection program. If industry standards are being used, then the standards should be stated. The application states that visual examinations and proven techniques have assessed the material condition for other plant systems. If industry standards are not relied on, provide details of the inspection methods and criteria which will demonstrate the effectiveness of the program.

Section 3.4.1 Intake Cooling Water

RAI 3.4.1-1: The periodic surveillance and preventive maintenance program is a current program which will be enhanced with regard to the scope of specific inspections and their documentation. Provide applicable frequencies, bases, and the most recent operating history supporting the adequacy of this program for the following components in the intake cooling water system: stainless steel, carbon steel and cast iron intake cooling water pumps; rubber intake cooling water pump expansion joints; and aluminum-bronze pump discharge valves exposed externally to the raw water environment. For other components in the intake cooling water, this information was provided.

RAI 3.4.1-2: For those structures which are inaccessible for inspection through the systems and structures monitoring program, an inspection of structures with similar materials and environments may be indicative of aging effects. Several components in the intake cooling water system credit this program for managing loss of material in the raw water environment. Provide the applicable frequencies, bases, and the most recent operating history supporting the adequacy of this program for the following components in the intake cooling water system: cast iron, carbon steel, bronze, monel, and stainless steel valves, piping, tubing, and fittings; stainless steel orifices; and stainless steel thermowells exposed internally to the raw water environment.

Section 3.4.2 Component Cooling Water

RAI 3.4.2-1: Although cracking due to stress corrosion, intergranular stress corrosion, embrittlement, and high-cycle fatigue are applicable aging effects for stainless steel materials exposed internally to the treated water environment, this aging effect is not identified for any stainless steel component in Table 3.4-2, “Component Cooling Water” of the LRA. Provide the bases for the exclusion of this applicable aging effect for stainless steel components in the component cooling water system.

Section 3.4.4 Chemical and Volume Control

RAI 3.4.4-1: Aging effects of components exposed to the air/gas environment is dependent, in part, on the type of air/gas environment, the operating temperature, and the water content. Provide the characteristic parameters of the air/gas environments applicable to the components found in the chemical and volume control system. Provide the bases by which the determination of no aging effects requiring management was concluded for all components exposed to the air/gas environment.

RAI 3.4.4-2: Cracking has been identified as a potential aging effect for stainless steel components which have been previously heat-traced. Provide the justification of crediting a sampling program of visual inspections for detecting cracking in these stainless steel components. In addition, provide additional information of the most recent inspection of these stainless steel components, the baseline inspection of these components, if applicable, and the plant history of previously heat-traced components.

Section 3.4.11 Control Building Ventilation

RAI 3.4.11-1: Provide a basis for the statement that condensation causes loss of material for stainless steel, copper or aluminum. Provide operating experience for this aging effect.

Section 3.4.14 Fire Protection

RAI 3.4.14-1: Selective leaching has been known to occur when certain alloys such as cast iron, brass, or bronze are exposed to certain environments such as raw water. Provide a basis, such as operating experience, for not conducting a one time inspection program for these materials in these environments for the fire protection piping.

RAI 3.4.14-2: Table 3.4-14, page 3.4-74 shows flame arrestors fabricated from carbon steel exposed to an air/gas environment as having no aging effects. This is not consistent with the other parts of the Table 3.4-14.

Section 3.4.15 Emergency Diesel Generators and Support Systems

RAI 3.4.15-1: Table 3.4-15, in the application showed that same material-environment combination (air/gas and carbon steel or stainless steel) resulted in loss of material or cracking in some parts of the table and no aging in other parts of the table. Clarify this discrepancy.

RAI 3.4.15-1-2: The staff requests that the applicant apply a selective leaching program to cast iron, brass, and bronze exposed to treated water. See question (1) in fire protection.

Florida Power & Light Company

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