

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 Sections 3.6.1, "Containment" and 3.6.2, "Other structures."

Please provide a schedule by letter, electronic mail, or telephonically for the submittal of your responses 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 responses to provide clarifications 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

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 Sections 3.6.1, "Containment" and 3.6.2, "Other structures."

Please provide a schedule by letter, electronic mail, or telephonically for the submittal of your responses 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 responses to provide clarifications 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 No. 50-250 and 50-251

Enclosure: Request for Additional Information

cc w/encl: See next page

DISTRIBUTION:

See next page

ADAMS ACCESSION NUMBER:

Publicly Available       Non-Publicly Available       Sensitive       Non-Sensitive

DOCUMENT NAME: G:\RLSB\AULUCK\RAIS 3.6.1.WPD

OFFICE	LA:DRIP	PM:RLSB:DRIP	BC:RLSB:DRIP
NAME	EGHylton	RAuluck	CIGrimes
DATE	/ /2001	02/02/2001	02/02/2001

**OFFICIAL RECORD COPY**

DISTRIBUTION:

**HARD COPY**

RLSB RF

E. Hylton

**E-MAIL:**

PUBLIC

R. Zimmerman

J. Johnson

D. Matthews

S. Newberry

C. Grimes

C. Carpenter

B. Zalcman

J. Strosnider

R. Wessman

G. Bagchi

K. Manoly

W. Bateman

J. Calvo

J. Shea

G. Holahan

T. Collins

B. Boger

J. Peralta

J. Moore

R. Weisman

J. Euchner

M. Mayfield

S. Bahadur

A. Murphy

W. McDowell

S. Droggitis

N. Dudley

RLSB Staff

-----

S. Hom

K. Jabbour

R. Correia

C. Julian (RII)

C. Casto (RII)

L. Wert (RII)

S. Koenick

J. Ma

D. Jeng

J. Davis

B. Jain

REQUEST FOR ADDITIONAL INFORMATION  
TURKEY POINT, UNITS 3 AND 4

Section 3.6.1 Containments

Section 3.6.1.1 Containment Structure Concrete Components

RAI 3.6.1.1-1

Section 3.6.1.1.1 states, “the groundwater parameters for chlorides and sulfates exceeded the threshold limits where degradation may occur.” Sections 3.6.1.1 and 3.6.2.3 identify aggressive chemical attack as an aging mechanism that can lead to either change in material properties for containment structure concrete components and/or loss of material for concrete structural components that are located below groundwater elevation, exposed to saltwater flow, or exposed to saltwater splash. The aging management program used to manage these aging effects for these two structural components, systems and structures Monitoring Program, does not include any detailed information in Section 3.2.15 of Appendix B of the LRA to address the aggressive chemical attack for concrete containment and structural components. Provide a description of the aging management program plans for addressing this aging mechanism.

Section 3.6.1.2 Containment Structure Steel Components

RAI 3.6.1.2-1

Table 3.6-2 of the LRA does not list attachment welds to the containment shell as an item requiring aging management. Welds between integral attachments to the primary containment have a pressure boundary intended function as well as a structural support intended function and are included within the scope of ASME Section XI, Subsection IWE. As such, provide justification for not including attachment welds to the containment shell as an item requiring aging management or, alternatively, describe the aging management program that manages the aging of these attachment welds. In addition, provide justification if the requirements of this aging management program are less stringent than the requirements for attachment welds that are included in ASME Section XI, Subsection IWE.

RAI 3.6.1.2-2

Table 3.6-2 of the LRA lists fuel transfer tube blind flanges, non-safety related pipe segments, radiant energy shields, and reactor vessel supports as items made of stainless steel. Section 3.6.1.5 of the LRA provides only a brief explanation for concluding that these items do not require aging management. Provide a more detailed explanation for not requiring an aging management program for these components, particularly with respect to cracking of the radiant energy shields and reactor vessel supports due to stress corrosion cracking and thermal fatigue.

RAI 3.6.1.2-3

Table 3.6-2 of the LRA lists the steam generator support material (lubrite) as a material subject to AMR. However, no discussion is provided in Section 3.6.1.5 of the LRA to justify its exclusion from items requiring aging management. Provide a detailed discussion of your basis for concluding that an AMP is not needed for lubrite supports, particularly with respect to its potential property changes (e.g., bearing/shear strengths, deformability/plastic flow, coefficient of friction, etc.) and the effects of these property changes on the intended function of the steam generator supports.

RAI 3.6.1.2-4

Section 3.2.1.2 of Appendix B of the LRA states that ASME Section XI, Subsection IWE Inservice Inspection Program meets the requirements of 10 CFR 50.55(a) and ASME Section XI, Subsection IWE, for inspection of Class CC metallic liners and pressure retention components without a discussion of the program contents. Provide a discussion of any plant-specific program contents, including how the visual inspection of the internal and external surfaces and fasteners is to be implemented, thereby providing assurance that the containment shell and internal structures have not degraded due to corrosion and/or cracking. 10 CFR Part 50 endorsed ASME Section XI, Subsection IWE with the condition that 10 CFR 50.55a(b)(2)(ix) provisions are met. The FPL submittal is not clear regarding this requirement. Confirm that both the scope and the detail of the inspection implemented in accordance ASME Section XI Table IWE-2500-1 also complies with the requirements of 10 CFR 50.55a(b)(2)(ix). In addition, NUREG 1611, "Aging Management of Nuclear Power Plant Containments for License Renewal," states that applicants for license renewal need to evaluate, on a case-by-case basis, the acceptability of inaccessible areas even though conditions in accessible areas may not indicate the presence of degradation to inaccessible areas. Describe how the aging effects for such inaccessible areas will be addressed.

Section 3.6.1.5 Containment Internal Structural Steel Components

RAI 3.6.1.5-1

Table 3.6-2 lists electrical, instrument panels and enclosures, miscellaneous structural components, and miscellaneous steel (stairs, platforms, and grating) as items made of galvanized carbon steel. The boric acid wastage surveillance program is designated as the aging management program for these items; however, Section 3.6.1.5 of the LRA does not provide a detailed discussion assigning this aging management program to these items. Provide an explanation for not including the systems and structural monitoring program as an additional AMP for these galvanized carbon steel items.

RAI 3.6.1.5-2

Based on the extent of the use of protective coatings at Turkey Point Units 3 and 4, provide an aging effect evaluation for the proper functioning of the sump screens, listed in Table 3.6-2 of the LRA, from the degradation of Turkey Point coatings.

RAI 3.6.1.5-3

Table 3.6-2 of the LRA lists conduits and cable tray supports as items requiring aging management for the loss of material aging effect. However, self-loosening of bolted connections due to vibration is not listed as an applicable aging effect. The staff's experience is that expansion and undercut anchors in concrete may become loose due to the local degradation of the surrounding concrete from vibratory loads. Provide the technical justification for not including loss of pre-load due to the effects of vibration on the concrete surrounding expansion and undercut anchors.

RAI 3.6.1.5-4

Are any elastomers, besides the sealants, gaskets, and moisture barriers listed in Table 3.6-2 of the LRA within the scope of license renewal and subject to an AMR? If so, then discuss their applicable aging effects. Since seepage through elastomers has been previously identified in other nuclear power plant structures, which is indicative of elastomer aging, provide a description of the applicable, site-specific operating experience and include any occurrences of observable seepage or leaching through concrete walls below grade. Observable seepage or leaching through concrete walls below grade is an indicator of the degradation of water stops, waterproofing membranes, caulking, and/or sealants. Describe the AMP used to manage the aging of Turkey Point elastomers.

RAI 3.6.1.5-5

Table 3.6-2 and Section 3.6.2 of the LRA lists anchorages/embedments that are located above the ground water table or in an air conditioned environment as items not requiring aging management. Provide the basis for your determination for not requiring aging management including a discussion of the potential for loss of material due to boric acid wastage for threaded fasteners in structural connections.

RAI 3.6.1.5-6

Define what is meant by the term "fouling" as discussed in Section 3.2.15 of Appendix B of the LRA. Also describe how fouling is detected using an external visual inspection.

RAI 3.6.1.5-7

Describe how loss of material, as discussed in Section 3.2.15 of Appendix B of the LRA, will be detected on internal surfaces using an external visual inspection.

Section 3.6.2 Other Structures

Section 3.6.2.1 Steel in Air Structural Components

RAI 3.6.2.1-1

Table 3.6-3 of the LRA states that loss of material is an aging effect for steel anchorages/embedments under an embedded/encased environment that requires management. The systems and structures monitoring program is the aging management program provided to manage the loss of material aging effect for these steel components.

Based on the information provided in Section 3.2.15 of appendix B of the LRA, the staff is uncertain how this aging effect will be managed by the structural monitoring program. Discuss the effectiveness of the systems and structures monitoring program for managing the loss of material aging effect for these normally inaccessible steel components.

RAI 3.6.2.1-2

In Section 3.6.2, for reinforced concrete components in structures other than containments, which are above groundwater elevation, you provided no aging management program. Most of the licensees use their systems and structures monitoring program to monitor these components. Please explain how these components will be monitored for aging effects at Turkey Point.

RAI 3.6.2.1-3

Galvanized carbon steel components exposed to indoor air environment (e.g., miscellaneous structural components, stair and platforms in Table 3.6-2; cable trays/conduits and HVAC duct supports in Table 3.6-3) are listed as items having no aging effect requiring aging management. Past staff review experience of other license renewal applications indicate that galvanized steel exposed to wetted inside containment/indoor environment can experience loss of material due to crevice corrosion (via collection of moisture at crevices). Discuss the basis for your conclusion that crevice corrosion of galvanized steel exposed to wetted conditions does not apply to Turkey Point Plant.

Section 3.6.2.3 Concrete Structural Components

RAI 3.6.2.3-1

Section 3.6.2.3 of the LRA states that cracking due to shrinkage and settlement of unreinforced masonry block walls is an aging effect requiring management for concrete structural components. However, the credited aging management program, systems and structures monitoring program, does not appear to provide adequate coverage for this aging effect. Provide a more detailed description of the inspection procedures used by the systems and structures monitoring program for monitoring the condition of masonry block walls.

RAI 3.6.2.3-2

Clarify whether the Turkey Point containments have a porous concrete sub-foundation? If so, explain how the reduction in foundation strength from the erosion of porous concrete sub-foundation was considered.

#### Section 3.6.2.4 Miscellaneous Structural Components

##### RAI 3.6.2.4-1

Section 3.6.2.4.2 of the LRA states that fire penetration seals are not subjected to aging effects. However, as part of the plant fire protection program, which is mandated by Appendix R of 10 CFR Part 50 and Branch Technical position (BTP) 9.5-1, the fire barrier inspection program requires periodic visual inspection of fire barrier penetration seals for signs of seal degradation due to increased hardness or shrinkage leading to cracking, separation from walls or components, separation of layers of material, and rupture or puncture of seals. Discuss how these aging effects are managed and clarify if the fire penetration seals are included within the scope of the existing fire protection program.

##### RAI 3.6.2.4-2

Section 3.6.2.4.2 of the LRA states, "Should indication of an aging effect arise in the control room ceiling and raised floor areas, it would be identified and corrected." However, Table 3.6-5 does not identify any aging effect or aging management program for control room ceiling and control room raised floor. Discuss and resolve this inconsistency, and identify appropriate aging management programs.

##### RAI 3.6.2.4-3

Section 3.6.2.4.2 of the LRA states that aluminum stop logs and pipe trench penetrations, which provide flood protection for the intake structure, have been evaluated for loss of material and determined not to require aging management. Provide details of the evaluation performed for loss of material and the basis for concluding that no aging management program is required.

##### RAI 3.6.2.4-4

Section 3.6.2.4.2 of the LRA states that the wooden and aluminum stop logs, which provide flood protection for the intake structure, have been evaluated for loss of seal and determined not to require aging management. Provide details of the evaluation performed for loss of seal and the basis for concluding that no aging management program is required.

##### RAI 3.6.2.4-5

Section 3.6.2.4.3 of the LRA states that a review of industry operating history and a review of NRC generic communications were performed to validate the set of aging effects that require management. The LRA provides a list of NRC generic communication; however, the references that were reviewed for industry operating history and experience are not identified. Clarify whether your review includes pertinent industry operating experience reports from other Westinghouse owner's group-member utilities and identify the references that were reviewed.

Florida Power & Light Company

Mr. S. Ross, Attorney  
Florida Power & Light Company  
P.O. Box 14000  
Juno Beach, Florida 33408-0420

Mr. Robert J. Hovey, Site  
Vice President  
Turkey Point Nuclear Plant  
Florida Power and Light Company  
9760 SW. 344th Street  
Florida City, Florida 33035

County Manager  
Miami-Dade County  
111 NW 1 Street, 29th Floor  
Miami, Florida 33128

Senior Resident Inspector  
Turkey Point Nuclear Plant  
U.S. Nuclear Regulatory Commission  
9762 SW. 344<sup>th</sup> Street  
Florida City, Florida 33035

Mr. William A. Passetti, Chief  
Department of Health  
Bureau of Radiation Control  
2020 Capital Circle, SE, Bin #C21  
Tallahassee, Florida 32399-1741

Mr. Joe Myers, Director  
Division of Emergency Preparedness  
Department of Community Affairs  
2740 Centerview Drive  
Tallahassee, Florida 32399-2100

Mr. Robert Butterworth  
Attorney General  
Department of Legal Affairs  
The Capitol  
Tallahassee, Florida 32304

Mr. Donald Jernigan  
Plant Manager  
Turkey Point Nuclear Plant  
Florida Power and Light Company  
9760 SW. 344th Street  
Florida City, Florida 33035

Turkey Point Nuclear Plant

Mr. Steve Franzone  
Licensing Manager  
Turkey Point Nuclear Plant  
Florida Power & Light Company  
9760 SW. 344th Street  
Florida City, Florida 33035

Mr. J.A. Stall  
Vice President - Nuclear Engineering  
Florida Power & Light Company  
P.O. Box 14000  
Juno Beach, Florida 33408-0420

Mr. Douglas J. Walter  
Nuclear Energy Institute  
1776 I Street NW  
Suite 400  
Washington, D.C. 20006

Mr. Stephen T. Hale  
Turkey Point Nuclear Point  
Florida Power & Light Company  
9760 S.W. 344 Street  
Florida City, Florida 33035

Ms. Joette Lorion  
13015 SW 90 Court  
Miami, Florida 33176

Ms. E.A. Thompson  
Project Manager for License Renewal  
Turkey Point Nuclear Plant  
Florida Power and Light Company  
9760 SW 344<sup>th</sup> Street  
Florida City, Florida 33035

Mr. Mark P. Oncavage  
12200 S.W. 110<sup>th</sup> Avenue  
Miami, Florida 33176-4520

David R. Lewis, Esq.  
Shaw Pittman  
2300 N Street, NW  
Washington, DC 20037