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Request to amend Append A, Facil Oper Lic#DPR-67 re new UHS flow barrier configuration Tech Spec 3/4.7.5; due date for submittal of Special Rept re beach survey results. Tech Spec 4.7.6.1.1 & UHS Bases mods. Forwards $1200 fee.

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FLORIDA POWER & LIGHT COMPANY

November 16, 1978
L-78-365

Director of Nuclear Reactor Regulation
Attention: Mr. Victor Stello, Director
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Stello:

Re: St. Lucie Unit 1
Docket No. 50-335
Proposed Amendment to
Facility Operating License DPR-67

In accordance with 10 CFR 50.30, Florida Power & Light Company (FPL) submits herewith three (3) signed originals and forty (40) copies of a request to amend Appendix A of Facility Operating License DPR-67.

The proposed amendments are described below and shown on the accompanying Technical Specification pages bearing the date of this letter in the lower right hand corner.

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The installation of gates/valves to control water flow through the Ultimate Heat Sink (UHS) barrier dam was completed on July 31, 1977. The Limiting Conditions for Operation, Action Statement, and Surveillance Requirements of Specification 3/4.7.5 are revised to reflect the new UHS flow barrier configuration.

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The required due date for submittal of the Special Report containing the results of the beach survey required by Specification 4.7.6.1.1 is increased from 10 days to 30 days following completion of the survey.

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The Ultimate Heat Sink Bases are modified to reflect deletion of the limitation on maximum water temperature.

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A001 S 3/40 W/attach $1,200

FPL has determined that this is a Class II amendment in accordance with 10 CFR 170.22. A check in the amount of $1,200.00 is accordingly enclosed.

The proposed amendments have been reviewed by the St. Lucie Plant Facility Review Group and the Florida Power and Light Company Nuclear Review Board. They have concluded that they do not involve an unreviewed safety question. A safety evaluation is attached.

Very truly yours,

Robert E. Uhrig

Robert E. Uhrig
Vice President

REU/MAS/cf

Attachment

cc: Mr. James P. O'Reilly, Region II
Mr. Harold F. Reis, Esquire

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.5.1 The ultimate heat sink shall be OPERABLE with:

a. Cooling water from the Atlantic Ocean providing a water level above -10.5 feet elevation, Mean Low Water, at the plant intake structure.

b. At least one isolation valve in the barrier dam between Big Mud Creek and the intake structure OPERABLE.

APPLICABILITY: At all times.

ACTION:

a. With requirement a. of the above specification not satisfied, be in at least HOT STANDBY within 1 hour and provide cooling water from Big Mud Creek within the next 12 hours.

b. With both of the isolation valves in the barrier dam between the intake structure and Big Mud Creek INOPERABLE, install temporary flow barriers and manually open the barrier dam isolation valves or be in HOT STANDBY within 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.5.1.1 The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the water level to be within its limit.

4.7.5.1.2 The isolation valves in the barrier dam between the intake structure and Big Mud Creek shall be demonstrated OPERABLE at least once per 6 months by cycling each valve through at least one complete cycle of full travel.

4.7.5.1.3 If the temporary flow barrier between the intake structure and Big Mud Creek is installed, the availability of onsite equipment capable of removing the barrier shall be verified at least once per 7 days.

3/4.7.6 FLOOD PROTECTION

LIMITING CONDITION FOR OPERATION

3.7.6.1 Flood protection shall be provided for the facility site.

APPLICABILITY: At all times.

ACTION:

With either a Hurricane Watch or a Hurricane Warning issued for the facility site, perform the St. Lucie Plant Beach Survey Procedure pursuant to Specification 4.7.6.1.1 below.

SURVEILLANCE REQUIREMENTS

4.7.6.1.1 The St. Lucie Plant Beach Survey Procedure shall be conducted at least once per year between the dates of May 25 and June 7 and within 30 days following the termination of either a Hurricane Watch or a Hurricane Warning for the facility site. A Special Report containing the results of these surveys shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days following the completion of the survey. The Special Report shall include an evaluation of the facility flood protection if, as evidenced by this survey program, the beach dune described in Specification 5.1.3 is lost.

4.7.6.1.2 The St. Lucie Mangrove Photographic Survey Procedure shall be conducted at least once per 12 months and shall be a color infrared photograph(s), or equivalent, of the mangrove area between the facility and the FP&L east property line. The results of these surveys shall be included in the Annual Operating Report for the period in which the survey was completed. This report shall include an evaluation of the facility flood protection if the survey indicates deterioration, either man-made or natural, of this mangrove area.

4.7.6.1.3 Meteorological forecasts shall be obtained from the National Hurricane Center in Miami, Florida at least once per 6 hours during either a Hurricane Watch or a Hurricane Warning.

SAFETY EVALUATION

A. ULTIMATE HEAT SINK

INTRODUCTION

This evaluation discusses a proposed revision to the Ultimate Heat Sink Limiting Conditions for Operation and Surveillance Requirements contained in Technical Specification 3/4.7.5.

DISCUSSION

A description of the design bases for the ultimate heat sink is provided in Section 9.2.7 of the St. Lucie Unit 1 FSAR. In summary, the ultimate heat sink consists of two separate water sources. The primary source is the Atlantic Ocean; the secondary source is Big Mud Creek and the Indian River which are connected to the Atlantic Ocean via the Fort Pierce and St. Lucie Inlets located north and south of Hutchinson Island, respectively. To separate these two sources of water for normal operation, a barrier dam was designed and constructed. The design of the barrier dam provides for flow control devices to be actuated only in an emergency which requires water to be supplied from Big Mud Creek.

The current Specification requires that on-site equipment capability for removing the flow barrier between the intake structure and Big Mud Creek be verified at least once per 7 days. This Specification was based upon the configuration of the interim barrier dam, consisting of two earthen dikes, which was in place as of the date of issuance of the Operating License. Following completion of the permanent barrier dam in June 1976, stop logs were installed, pending the installation of the flow control valves, to preclude the flow of water from Big Mud Creek through the openings in the barrier dam during normal operation. On-site equipment capability for removal of the stop logs was thus still required pending the installation of the flow control valves. On July 31, 1977, as required by paragraph F.1 of Enclosure 1 to License No. DPR-67, St. Lucie Plant Unit No. 1, installation of gates/valves to control water flow in the ultimate heat sink barrier dam was completed. In accordance with FPL's application dated July 18, 1977, (L-77-225), license condition F.1 was deleted by amendment No. 18 to the license on December 22, 1977. The final system configuration is thus as described in St. Lucie Plant Unit No. 1 Final Safety Analysis Report Section 9.2.7.2.1 On-site equipment capability is therefore required only in the event that the flow control valves are inoperable and stop logs must be installed on an interim basis to block flow.

Therefore, the following Technical Specification changes are proposed:

1. Existing Specification 3.7.5.1.b is deleted as well as the associated part of Specification 4.7.5.1.1. Specification 3.7.5.1.b requires that the average ultimate heat sink water temperature be no greater than 96°F. Specification 4.7.5.1.1 requires, in part that daily surveillance of the average ultimate heat sink water temperature be conducted to verify compliance with Specification 3.7.5.1.b. The performance and documentation of the temperature surveillance is considered to be redundant and unnecessary for the following reasons:

a. The ultimate source of cooling water is the Atlantic Ocean which, in this geographical area, does not exhibit temperature measurements in excess of 87°F. This is sufficiently below 96°F to render surveillance of ocean water temperature unnecessary. Furthermore, in the unlikely event that the ocean water temperature does reach 96°F, the water in Big Mud Creek would be at least at that temperature because of its connection with the Atlantic Ocean through the Indian River and the St. Lucie and Fort Pierce Inlets. The requirement to then provide cooling water from Big Mud Creek to meet the Limiting Condition for Operation thereby becomes meaningless.

b. The heating effect of the sun can cause the water in the intake canal to heat up as much as 2°F above the ocean water temperature. Thus, taking incident solar heating into account, the intake canal water temperature will still be well below 96°F and therefore not likely to require initiation of the ACTION statement by itself.

c. The heating effect of the sun would be greater if the level of water in the intake canal were lower, which could occur in case of sufficient flow blockage. However, such blockage would rapidly lower the intake canal level and would be detected during the performance of the daily water level surveillance required by Specification 4.7.5.1.1. Thus, daily surveillance of average water temperature is redundant to the daily water level surveillance.

2. New Specification 3.7.5.1.b and ACTION statement "b" reflect the final system configuration as described in the FSAR by requiring operability of at least one isolation valve in the barrier dam between Big Mud Creek and the intake structure. As discussed in Section 9.2.7.2.1 of the St. Lucie 1 FSAR, two 100% openings, each opening furnishing sufficient flow for both Units 1 and 2, have been provided.

3. Separate ACTION statements are established for Specifications 3.7.5.1.a and 3.7.5.1.b ACTION statement "a" is revised to reflect the changes made by 1 and 2 above by deleting the reference to removal of flow barriers and specifying the applicability of Specification 3.7.5.1.a.

4. Existing Specification 4.7.5.1.2 is renumbered as 4.7.5.1.3 and revised to reflect that reliance is placed upon on-site equipment capability only in the event that stop logs must be installed to control flow. By previous safety evaluations submitted on June 22, 1976 (L-76-233), and March 9, 1977 (L-77-75), the use of stop logs to control flow through the barrier dam was shown to be an acceptable interim means of flow control.

5. New Specification 4.7.5.1.2 is added to require that the isolation valves in the barrier dam between the intake structure and Big Mud Creek be demonstrated OPERABLE at least once per 6 months by cycling each valve through at least one complete cycle of full travel.

In regard to testing of the ultimate heat sink, Section 9.2.7.4 of St. Lucie Unit No. 1 FSAR states:

> "9.2.7.4 TESTING AND INSPECTION
>
> Valves provided in the barrier wall which prohibit flow from Big Mud Creek to the intake canal are tested as specified by the Technical Specifications. These devices will be tested individually and in accordance with the restrictions on the quantity of water that may be withdrawn from Big Mud Creek as imposed by local, state and federal authorities."

The Atomic Safety Licensing Board's Partial Initial Decision on St. Lucie Unit No. 2 regarding testing of the ultimate heat sink, which was incorporated into the construction permit for Unit 2, includes condition (i) as follows:

> "(i) the Applicant shall not draw more than four (4) million gallons of water per year from Big Mud Creek for routine testing;"

In addition, by agreement between Florida Power & Light Company and the Central and South Florida Flood Control District, flow drawn from Big Mud Creek is to be limited to less than four million gallons per year.

Based upon data supplied by the architect-engineer and the results of preoperational testing of the system involving actual flow, the surveillance testing at the interval prescribed in Specification 4.7.5.1.2 will result in a draw of water significantly less than the above limit.

CONCLUSIONS

(1) The proposed changes do not increase the probability or consequences of accidents or malfunctions of equipment important to safety and do not reduce the margin of safety as defined in the basis for any technical specification and, therefore, do not involve a significant hazards consideration.

(2) There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner.

(3) Such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public. In addition, the proposed surveillance requirements will have no adverse impact upon the environment.

B. FLOOD PROTECTION

INTRODUCTION

This evaluation discusses a proposed revision to the Flood Protection Surveillance Requirement contained in Specification 4.7.6.1.1.

DISCUSSION

Specification 4.7.6.1.1 requires that the St. Lucie Plant Beach Survey Procedure be performed at least once per year between the dates of May 25 and June 7 and within 30 days after termination of either a Hurricane Watch or a Hurricane Warning for the site. A Special Report on the results of the survey is to be prepared and submitted within 10 days following completion of the survey.

FPL believes that the current 10-day time period between the date the survey is completed and the date it must be submitted to the NRC is unnecessarily short. The data for 19 monuments must be processed for analysis and evaluation and the results must be placed in a report format and prepared for submittal. We believe that a more reasonable time period in which to perform these operations and to submit the report would be 30 days and therefore propose that Specification 4.7.6.1.1 be revised accordingly:

This request is essentially administrative in nature to relieve some of the burden of preparation of the report. The report is routine and does not require the expedited activity necessitated by the 10-day submittal requirement.

CONCLUSIONS

(1) The proposed change is administrative only and therefore does not increase the probability or consequences of accidents or malfunctions of equipment important to safety and does not reduce the margin of safety as defined in the basis for any technical specification and, therefore, does not involve a significant hazards consideration.

(2) There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner.

(3) Such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public. In addition, the proposed surveillance requirements will have no adverse impact upon the environment.

STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

Robert E. Uhrig, being first duly sworn, deposes and says:

That he is a Vice President of Florida Power & Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this said 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.

Robert E. Uhrig

Subscribed and sworn to before me this

16 day of November, 1978

Betty Brittain

NOTARY PUBLIC, in and for the county of Dade, State of Florida

My commission expires: NOTARY PUBLIC STATE OF FLORIDA AT LARGE MY COMMISSION EXPIRES MARCH 27, 1982 BONDED THRU MAYNARD BONDING AGENCY