



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

December 27, 2000

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

SUBJECT: ST. LUCIE UNIT 1 - ISSUANCE OF AMENDMENT REGARDING
REQUIREMENT FOR CONTAINMENT HYDROGEN RECOMBINER POST-
OPERATION INSULATION RESISTANCE TESTING (TAC NO. MA8771)

Dear Mr. Plunkett:

The Commission has issued the enclosed Amendment No. 169 to Facility Operating License No. DPR-67 for the St. Lucie Plant, Unit No. 1. This amendment consists of a revision to the Technical Specification (TS) surveillance requirement in response to your application dated April 23, 2000.

This amendment would remove a timing restriction concerning TS Surveillance Requirement 4.6.4.2.b, Item 4, for the containment hydrogen recombiner post-operation resistance testing. This change is consistent with operating experience, the equivalent Unit 2 TS surveillance and NUREG-1432, which has no requirement as to when the test is performed.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Kahtan N. Jabbour, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-335

Enclosures:

1. Amendment No. 169 to DPR-67
2. Safety Evaluation

cc w/enclosures: See next page

NR-058

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/RA by R. Hernan for K. Jabbour/
Kahtan N. Jabbour, Senior Project Manager, Section 2
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 169
License No. DPR-67

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power & Light Company (the licensee), dated April 23, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

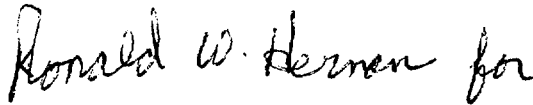
2. Accordingly, Facility Operating License No. DPR-67 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and by amending paragraph 2.C.(2) to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 169, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Richard P. Correia for".

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 27, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 169

TO FACILITY OPERATING LICENSE NO. DPR-67

DOCKET NO. 50-335

Replace the following page of the Appendix "A" Technical Specifications with the attached page. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

Remove Page

3/4 6-25

Insert Page

3/4 6-25

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying during a recombiner system functional test that the heater sheath temperature increases to $\geq 1200^{\circ}\text{F}$ within 5 hours and is maintained for at least 4 hours.
4. Verifying the integrity of the heater electrical circuits by performing a continuity and resistance to ground test following the above required functional test.
The resistance to ground for any heater phase shall be $\geq 10,000$ ohms.



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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO.169 TO FACILITY OPERATING LICENSE NO. DPR-67

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT, UNIT NO. 1

DOCKET NO. 50-335

1.0 Introduction

By letter dated April 23, 2000, Florida Power and Light Company (FPL or the licensee) submitted a request for a change to the St. Lucie Unit 1 Technical Specifications (TSs). The proposed change would revise TS Surveillance Requirement (SR) 4.6.4.2.b to delete the word immediately from Item 4 of the above requirement. In effect, the proposed change would remove a timing restriction concerning the above requirement for the hydrogen recombiner post-operation resistance testing. As a result, the amendment would allow the recombiner units to cool after an operational test run, and provide a more reliable measurement of the resistance-to-ground of the electrical insulation.

2. Evaluation

The purpose of the resistance-to-ground surveillance test for the hydrogen recombiners is to provide meaningful results that allow trending for the identification of potential degradation of the heater insulation material. The licensee has stated that performing the resistance-to-ground test immediately after a prolonged operational test run, as is presently required by SR 4.6.4.2.b, Item 4, fails to meet this intent. This is due to the behavior of the recombiner insulation material in response to the high temperatures incurred from the just-completed operational test run. The increased temperature creates an unacceptable testing condition, and resulting in anomalous and unacceptable resistance test results although there is no actual insulation degradation.

FPL has referenced an Institute of Nuclear Power Operations (INPO) operating experience report, OE9380, titled "Primary Containment Hydrogen Recombiners Declared Inoperable Due to Interpretation of Surveillance Test Requirement." The report documents industry experience with Westinghouse hydrogen recombiners regarding the heater insulation material not meeting the acceptance criterion for resistance to ground within 2 hours of an operational test run. The report states, however, that the insulation material was not degraded, and that, after a cooling period, resistance measurements increased sufficiently to satisfy the test criterion. St. Lucie Unit 1 encountered conditions similar to the industry experience.

The INPO report attributes the observed behavior of the recombiner insulation to the negative temperature coefficient of resistance of its constituent material, magnesium mono-oxide (MgO).

In other words, the electrical resistance of MgO decreases as its temperature is increased. Conducting the test for resistance to ground directly after an operational test run (while the recombiner unit is hot), therefore, will provide a lower measurement of resistance than if it were performed under ambient temperature conditions.

The INPO report concludes that the negative temperature coefficient of resistance for the heater insulation material does not adversely affect the operability of the hydrogen recombiner units. Despite these instances of anomalous test results taken at high temperatures, as reported by INPO, through extensive industry operating experience, MgO has proven to be a reliable hydrogen recombiner insulation material.

Thus, the INPO report substantiates the licensee's statement that the anomalous test results taken while the insulation material is at a high temperature provide a false indication of degradation. The licensee has stated, therefore, that the surveillance requirement to perform the resistance-to-ground test immediately after a prolonged period of operation is contrary to the intent of the test.

To improve the current test condition, FPL has proposed a change to the surveillance requirement that would effectively allow the insulation material to cool between the operational run and the resistance test. The proposed test condition would provide a more accurate indication of actual equipment condition, and allow for a more informative trending of test results. This change is consistent with operating experience, the equivalent Unit 2 TS surveillance and NUREG-1432, which has no requirement as to when the test is performed.

Based on its review of the licensee's submittal, the staff concludes that the proposed change to SR 4.6.4.2.b, to delete the word immediately from Item 4, provides a more reliable measure of actual insulation condition, and would meet the intent of the test. Therefore the staff finds that the proposed change is acceptable

3.0 STATE CONSULTATION

Based upon a letter dated March 8, 1991, from Mary E. Clark of the State of Florida, Department of Health and Rehabilitative Services, to Deborah A. Miller, Licensing Assistant, U.S. Nuclear Regulatory Commission (NRC), the State of Florida does not desire notification of issuance of license amendments.

4.0 ENVIRONMENTAL CONSIDERATION

These amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes a surveillance requirement. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (65 FR 34746). Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Om Chopra
John Lehning
Kahtan N. Jabbour

Date: December 27, 2000

Mr. T. F. Plunkett
Florida Power and Light Company

ST. LUCIE PLANT

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