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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

April 30, 1976

DO NOT REMOVE

posted
Am-5
to
DPR-67

Docket No. 50-335

Florida Power & Light Company
ATTN: Dr. Robert E. Uhrig
Vice President
Nuclear and General Engineering
Post Office Box 3100
Miami, Florida 33101

Gentlemen:

The Commission has issued the enclosed Amendment No. 5 to Facility License No. DPR-67 for the St. Lucie Plant Unit No. 1. The amendment consists of a revision to License No. DPR-67 and changes in the Technical Specifications in response to your request dated April 27, 1976 and supplement dated April 30, 1976. Your proposed amendment has been modified and these modifications have been discussed with representatives of your staff.

The amendment: (1) adds a reference to Revision 5 of the Security Plan, deletes a requirement from Section 2.D of the license regarding approval and implementation of a modified security plan prior to exceeding five percent of rated power and adds a requirement to Enclosure 1 to License No. DPR-67 to implement further security plan revisions prior to June 30, 1976, (2) adds an interim requirement to Enclosure 1 which limits power to 60% of rated power, and (3) deletes Section B of Enclosure 1 which identifies items to be completed to the satisfaction of the Commission prior to exceeding five percent of rated power (this item has been completed and therefore is no longer relevant).

Copies of the related Safety Evaluation and the Federal Register Notice also are enclosed.

Sincerely,

Dennis L. Ziemann
Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:

1. Amendment No. 5 to License No. DPR-67
2. Safety Evaluation
3. Federal Register Notice

cc w/enclosures: see next page

April 30, 1976

cc w/enclosures:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 5
License No. DPR-67

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Florida Power & Light Company (the licensee) dated April 27, 1976 as supplemented by letter dated April 30, 1976, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is hereby amended as follows:
 - A. Revise the second paragraph of Section 2.D of the license to read:

"Revision No. 4 dated February 12, 1976 submitted by a letter from the licensee dated February 9, 1976, including the exceptions listed in the enclosure to the letter, and Revision No. 5 dated February 25, 1976 submitted by a letter from the licensee dated February 25, 1976."
 - B. Delete the paragraph following Section 2.D(2) of the license.

C. Delete Section B of Enclosure 1 to the license in its entirety.

D. Add a new Section E.4. to Enclosure 1 of the license to read:

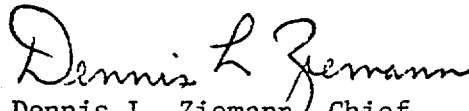
"4. Implementation of revisions to the security plan, requested by NRC letter of April 30, 1976, after approval of the revisions by the Commission."

E. Add a new Section K to read:

"Operation shall be in accordance with the limitations proposed in Florida Power & Light Company letter L-76-172 of April 27, 1976 with the exception that the Power Level-High Trip Setpoint and Allowable Values shall not exceed 60% of rated thermal power."

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Date of Issuance: April 30, 1976



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 5 TO LICENSE NO. DPR-67

FLORIDA POWER & LIGHT COMPANY

ST. LUCIE PLANT UNIT NO. 1

DOCKET NO. 50-335

INTRODUCTION

By letter dated April 27, 1976 and supplement dated April 30, 1976, Florida Power & Light Company (FPL) requested an amendment to Facility License No. DPR-67 for the St. Lucie Plant Unit No. 1. The amendment request, as modified, would:

1. Add a reference to Revision 5 of the St. Lucie Security Plan, delete a requirement from Section 2.D of the license regarding approval and implementation of a modified security plan prior to exceeding five percent of rated power and add a requirement to Enclosure 1 to License No. DPR-67 to implement further security plan revisions prior to June 30, 1976,
2. Add an interim requirement to Enclosure 1 which limits power to 60% of rated power, and
3. Delete Section B of Enclosure 1 which identifies items to be completed to the satisfaction of the Commission prior to exceeding five percent of rated power.

The amendment proposed by FPL has been modified and these modifications have been discussed with representatives of the FPL staff.

DISCUSSION

A. Security Plan

Section 2.D of the license states "The initially approved security plan is presently being modified. The licensee shall implement the modified security plan, after approval by the Commission, prior to exceeding five percent of full rated power." The license statement was based on our review of the Security Plan including Revision No. 4 referred to in the license. Since the license was issued we have completed our evaluation of Revision 5 to the Security Plan dated February 25, 1976. We find that the changes identified in Revision

5 do not decrease the effectiveness of the plan and are acceptable. We would therefore amend the license to add reference to Revision 5 and to delete the license condition quoted above. However, we have performed an additional evaluation transmitted by letter from D. L. Ziemann to FPL dated April 30, 1976. In that letter we identify two additional revisions which, in our opinion, would improve the plan. To assure timely resolution of these items we would add a condition to Enclosure 1 of the license that requires these items to be resolved to our satisfaction by June 30, 1976.

B. Deletion of Section B of Enclosure 1 to License No. DPR-67

Section B of Enclosure 1 states:

- B. The following items shall be completed to the satisfaction of the Commission prior to exceeding five percent of full rated power:
1. Installation of control circuitry providing the capability to energize and de-energize the ECCS miniflow bypass valve operators (V-3659 and V-3660) from the control room.
 2. The licensee shall submit to the Commission a report which demonstrates that the tests to be conducted during power ascension testing meet the intent of items D.1.c. and D.1.d. of Appendix A of Regulatory Guide 1.68, which recommend testing of "Plant response to load swings, including response to automatic dispatcher control, if applicable", and "Automatic control system checkout-steam generator level control, automatic rod control, turbine control", respectively.
 3. After five percent of full rated power is exceeded, the alarm setpoint for the containment area monitors (CIS) shall be less than or equal to 90 mR/hr. Before five percent of full rated power is exceeded, a value of less than or equal to 300 mR/hr is allowed, as a special exception to technical specification 3.3.3.1.

The Commission's Office of Inspection and Enforcement has verified that item B.1. above has been satisfactorily completed. FPL submitted a report as required by B.2 in a letter dated April 1, 1976 and supplemented the report at our request by letters dated April 26 and April 30, 1976. We have reviewed the submittal as supplemented and conclude that FPL has demonstrated that the tests to be conducted meet the intent of Sections D.1.C. and D.1.d. of Regulatory Guide 1.68 and are acceptable.

Item B.3. provided a temporary exemption to a Technical Specification limit which requires that the alarm setpoints for the containment area monitors (CIS) be less than or equal to 90 mR/hr in Mode 6, the refueling mode. The exemption, which allowed for initial uncertainties, was to be removed prior to the initial increase in power above five percent of rated power. The exemption is no longer required and the setpoint requirements listed in the Technical Specifications would apply. The Commission's Office of Inspection and Enforcement has verified that the alarm setpoints have been reset in accordance with the Technical Specifications. Based on the considerations discussed above, the conditions of Section B are no longer relevant and should be deleted.

C. Reduced Coolant Flow Rate

Current FSAR analyses, setpoint analyses, and Technical Specifications for St. Lucie Unit No. 1 are based on a reactor coolant flow rate of 370,000 gpm. However, recent hot functional test measurements have indicated that slightly less flow may exist. The best estimate flow rate indicated by the tests is 377,491 gpm. Assuming a 3.5% flow measurement uncertainty, the guaranteed available flow rate is 364,278 gpm. The flow measurements are based upon results from Byron Jackson flow tests of the St. Lucie Unit No. 1 reactor coolant pumps.

To permit continuation of the plant power ascension program, FPL submitted proposed interim Technical Specifications and supporting analyses for operation at 90% of rated power and assuming a minimum reactor coolant flow rate of 354,000 gpm.

The licensee has proposed the following interim Technical Specification changes for operation with a reactor coolant flow rate of at least 354,000 gpm:

1. The DNB safety limit curves would be adjusted to maintain a limiting DNBR of 1.3 based upon the W-3 correlation and a flow rate of 354,000 gpm.
2. The limiting safety system settings would be changed to reflect the reduced reactor coolant flow rate at a power level of 90% of rated power. However, we would modify the proposed specification to limit the power to 60% of rated power at the reduced flow. Therefore, the high power trip setpoint and allowable value shown on Table 2.2-1 of the Technical Specifications would be changed to an interim value of <60% of rated thermal power.

3. The thermal margin/low pressure trip setpoint equation would be modified in accordance with the reduced coolant flow.
4. The limiting conditions for operation on the axial shape index would be modified to maintain the same steady state operating margin to DNB.

The licensee has performed evaluations to determine if there was evidence of flow blockage, reactor coolant loop flow asymmetry or pump anomalies. These evaluations compared the relationship between system flow and the pressure drop across individual components with those observed at other similar Combustion Engineering plants. The licensee concluded that the slight reduction in flow experienced at St. Lucie was due only to slight variations in as-built pump characteristics relative to pumps in other CE plants. Based on a preliminary review, the staff concurs with this conclusion.

In support of operation at 90% of rated power, the Florida Power & Light Safety Analyses for St. Lucie Unit No. 1 were reviewed for sensitivity to the reduced reactor coolant flow rate. The loss of flow transient was determined to be the limiting transient, and a complete new analysis was performed for a reduced coolant flow rate of 354,000 gpm and 90% of rated power. The results indicated a DNBR of 1.58. A LOCA analysis was performed for the reduced coolant flow rate, and for reduced peak linear heat generation rates of 15.6 and 14.2 kw/ft. The resulting peak clad temperatures for the above cases were predicted to be 2189°F and 1956°F respectively. The two cases cited represent a reduction from the current FSAR peak linear heat generation rate of 15.8 kw/ft of about 1% and 10% respectively. From the results of the above calculations, we conclude that power operation at 60% of rated power will provide safety margins to the limits associated with plant transient and LOCA response which are equal to or greater than margins previously found acceptable.

In addition, the staff has performed a preliminary evaluation of the sensitivity of DNBR to the reduced flow which indicates that for a flow rate of 354,000 gpm the required reduction in power is less than 10% to maintain a DNBR determined for 370,000 gpm. Therefore, a 40% power reduction provides a substantially increased safety margin.

Current Technical Specifications for another Combustion Engineering plant, Calvert Cliffs Unit No. 1, contain a provision for operation with one or more reactor coolant loops out of service with a corresponding reduction in thermal power. The Technical Specifications for Calvert Cliffs Unit No. 1, which were based upon analyses found acceptable by the staff, allow operation at 80% of rated power for a reactor coolant flow of about 77% of full flow. Accordingly, operation at 60% of rated power with a measured flow of at least 95% of full flow provides a large margin of safety.

We have reviewed the information submitted by the licensee and, on the basis of the above discussion, we conclude that operation under the proposed interim Technical Specifications, as modified, is acceptable.

The NRC staff will continue its review of operation at the proposed 90% of rated thermal power.

ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the changes do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the changes 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, and (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.

Date: APR 11 1978

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-335

FLORIDA POWER & LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 5 to Facility Operating License No. DPR-67, issued to Florida Power & Light Company (the licensee), which revised the license and its appended Enclosure 1 for operation of the St. Lucie Plant Unit No. 1 (the facility) located in St. Lucie County, Florida. The amendment is effective as of its date of issuance.

This amendment: (1) adds a reference to Revision 5 of the Security Plan, deletes a requirement from Section 2.D of the license regarding approval and implementation of a modified security plan prior to exceeding five percent of rated power and adds a requirement to Enclosure 1 to License No. DPR-67 to implement further security plan revisions prior to June 30, 1976, (2) adds an interim requirement to Enclosure 1 which limits power to 60% of rated power, and (3) deletes Section B of Enclosure 1 which identifies items to be completed to the satisfaction of the Commission prior to exceeding five percent of rated power (this item has been completed and therefore is no longer relevant).

The application for amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment

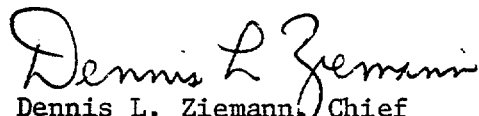
was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated April 27, 1976 and supplement dated April 30, 1976, (2) Amendment No. 5 to License No. DPR-67, and (3) the Commission's concurrently issued Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Indian River Junior College Library, 3209 Virginia Avenue, Ft. Pierce, Florida 33450. A copy of items (2) and (3) may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 30th day of April, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION


Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors