September 22, 1988

Docket No. 50-389

Mr. W. F. Conway
Senior Vice President - Nuclear
Nuclear Energy Department
Florida Power and Light Company
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Dear Mr. Conway:

SUBJECT: ST. LUCIE UNIT 2 - ISSUANCE OF AMENDMENT RE: MAIN STEAM ISOLATION VALVES AND MAIN FEEDWATER ISOLATION VALVES (TAC NO. 66643)

The Commission has issued the enclosed Amendment No. 35 to Facility Operating License No. NPF-16 for the St. Lucie Plant, Unit No. 2. This amendment consists of changes to the Technical Specifications in response to your application dated November 16, 1987.

This amendment revises Sections 4.7.1.5 and 4.7.1.6 of the Technical Specifications (TS) for the main steam isolation valves (MSIVs) and the main feedwater isolation valves (MFIVs), respectively.

The staff made changes to the Bases sections of TS 4.7.1.5 and 4.7.1.6 which were discussed with and agreed to by your staff. The changes make it clear that for the MSIV, the maximum allowable stroke time is 5.6 seconds and the maximum allowable instrument delay time is 1.15 seconds. For the MFIV, the maximum allowable stroke time is 4.0 seconds and the maximum allowable instrument delay time is 1.15 seconds. Your Inservice Testing Program should also reflect these stroke times since the TS references 4.0.5.

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,

Original signed by

E. G. Tourigny, Project Manager
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 35 to NPF-16
2. Safety Evaluation

cc w/enclosures:
See next page

DFO1
1/1

*See previous concurrence

LA:PDII-2*	PM:PDII-2*	PM:PDII-2*	SPLB*	EMEB*	D:PDII-2*	OGC
DMiller	JSchiffgens	ETourigny:bg		LMarsh	HBerkow	
05/02/88	05/02/88	05/11/88	05/12/88	09/12/88	09/13/88	09/19/88

Mr. W. F. Conway
Florida Power & Light Company

St. Lucie Plant

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

FLORIDA POWER & LIGHT COMPANY

ORLANDO UTILITIES COMMISSION OF

THE CITY OF ORLANDO, FLORIDA

AND

FLORIDA MUNICIPAL POWER AGENCY

DOCKET NO. 50-389

ST. LUCIE PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 35
License No. NPF-16

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Florida Power & Light Company, et al. (the licensee), dated November 16, 1987, 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. NPF-16 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. 35 , 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Leon B. Engle for
Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 22, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 35

TO FACILITY OPERATING LICENSE NO. NPF-16

DOCKET NO. 50-389

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove Pages	Insert Pages
3/4 7-9	3/4 7-9
3/4 7-10	3/4 7-10
B3/4 7-3	B3/4 7-3

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.5 Each main steam line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

MODE 1 - With one main steam line isolation valve inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

MODES 2, 3 and 4 - With one main steam line isolation valve inoperable, subseqent operation in MODES 2, 3 or 4 may proceed provided:

a. The isolation valve is maintained closed.

b. The provisions of Specification 3.0.4 are not applicable.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.5 Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within 6.75 seconds when tested pursuant to Specification 4.0.5.

PLANT SYSTEMS

MAIN FEEDWATER LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.6 Each main feedwater line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

MODE 1 - With one main feedwater line isolation valve inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

MODES 2, 3 and 4 - With one main feedwater line isolation valve inoperable, subseqent operation in MODE 2, 3, or 4 may proceed provided:

a. The isolation valve is maintained closed.

b. The provisions of Specification 3.0.4 are not applicable.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.6 Each main feedwater line isolation valve shall be demonstrated OPERABLE by verifying full closure within 5.15 seconds when tested pursuant to Specification 4.0.5.

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1.0 gpm primary to secondary tube leak in the steam generator of the affected steam line and a concurrent loss of offsite electrical power. These values are consistent with the assumptions used in the safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blow down in the event of a steam line rupture. This restriction is required to (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the Surveillance Requirements is consistent with the assumptions used in the safety analyses.

The specified 6.75 second full closure time represents the addition of the maximum allowable instrument response time of 1.15 seconds and the maximum allowable valve stroke time of 5.6 seconds. These maximum allowable values should not be exceeded because they represent the design basis values for the plant.

3/4.7.1.6 MAIN FEEDWATER LINE ISOLATION VALVES

The main feedwater line isolation valves are required to be OPERABLE to ensure that (1) feedwater is terminated to the affected steam generator following a steam line break and (2) auxiliary feedwater is delivered to the intact steam generator following a feedwater line break. If feedwater is not terminated to a steam generator with a broken main steam line, two serious effects may result: (1) the post-trip return to power due to plant cooldown will be greater with resultant higher fuel failure and (2) the steam released to containment will exceed the design.

Due to removal of the main feed check valve from the plant design and its replacement with a second main feedwater line isolation valve, there is nothing other than the main feedwater line isolation valves to prevent back flow of AFW following a feed line break. This may result in a loss of condensate inventory and the potential for not being able to feed the steam generator.

The concern is the failure of one main feedwater line isolation valve to close with the other main feedwater line isolation valve in that line being inoperable (i.e., stuck open). It is thus desired to preclude operation for extended periods with a main feedwater line isolation valve known to be stuck in the open position.

The specified 5.15 second full closure time represents the addition of the maximum allowable instrument response time of 1.15 seconds and the maximum allowable valve stroke time of 4.0 seconds. These maximum allowable values should not be exceeded because they represent the design basis values for the plant.

3/4.7.1.7 ATMOSPHERIC DUMP VALVES

The limitation on maintaining the atmospheric dump valves in the manual mode of operation is to ensure the atmospheric dump valves will be closed in the event of a steam line break. For the steam line break with atmospheric dump valve control failure event, the failure of the atmospheric dump valves to close would be a valid concern were the system to be in the automatic mode during power operations.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations to 100°F and 200 psig are based on a steam generator RT_{NDT} of 20°F and are sufficient to prevent brittle fracture.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 INTAKE COOLING WATER SYSTEM

The OPERABILITY of the Intake Cooling Water System ensures that sufficient cooling capacity is available for continued operation of equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 35

TO FACILITY OPERATING LICENSE NUMBER NPF-16

FLORIDA POWER AND LIGHT COMPANY, ET AL.

ST. LUCIE PLANT, UNIT 2

DOCKET NUMBER 50-389

BACKGROUND

By letter dated November 16, 1987, Florida Power and Light Company (FPL, the licensee) proposed changes to the Technical Specifications (TS) for the St. Lucie Plant, Unit 2. The proposed changes would revise TS Sections 4.7.1.5 and 4.7.1.6 which specify the surveillance requirements for the main steam isolation valves (MSIVs) and main feedwater isolation valves (MFIVs), respectively.

DISCUSSION

The proposed amendment consists of showing in TS Section 4.7.1.5 the correct value of the MSIV response time, 6.75 seconds, consistent with TS Section 3/4.3.2, and adopting in TS Sections 4.7.1.5 and 4.7.1.6 the wording of the Combustion Engineering Standard Technical Specifications (STS) for the MSIV and the MFIV surveillance frequency requirements. The first of the proposed changes is needed to resolve discrepancies in the TS between Surveillance Requirement (SR) 4.7.1.5.b and Table 3.3-5 parts 3f and 6b, based on the input values and terminology used in the stretch power safety analysis. The second of the proposed changes is needed to eliminate duplication between the TS and the Inservice Testing (IST) Program and to adopt a standard terminology for the MSIV and MFIV surveillance frequencies.

In a main steam line break (MSLB) analysis, it is necessary to assure that the MSIVs and MFIVs close within a certain time limit once the MSIV and MFIV closure initiating condition is reached (high containment pressure or low steam generator pressure). This serves to minimize the positive reactivity effects of the reactor coolant system cooldown associated with the blowdown and to limit the pressure rise within the containment in the event of a steam line rupture within containment.

The MSIV time to the full closure requirement given in TS SR 4.7.1.5.b currently reflects only the valve stroke time, 5.60 seconds. The MSIV response time given in Table 3.3-5 parts 3f and 6b reflects the sum of the total instrument delay time plus the valve stroke time. The licensee has allowed up to 1.15 seconds

for instrument delay to yield the maximum response time, 6.75 seconds, shown in the table. The proposed revision of SR 4.7.1.5 expresses the maximum valve closure time. The staff finds this acceptable.

It should be noted that, with regard to the MFIVs, the time to full closure requirement given in SR 4.7.1.6.b is the MFIV response time, 5.15 seconds, which agrees with Table 3.3-5 parts 3e and 6a. Similar to the MSIV response time, the MFIV response time given in the SR and Table 3.3-5 reflects the sum of the total instrument delay time plus the valve stroke time. Here the licensee has also allowed up to 1.15 seconds for instrument delay, yielding a nominal valve stroke time of 4.00 seconds.

The licensee used a value of 6.75 seconds for the MSIV response time and 5.15 seconds for the MFIV response time in the stretch power MSLB analysis. As long as the time from reaching the MSIV closure initiating condition to full valve closure is less than or equal to 6.75 seconds and the time from reaching the MFIV closure initiating condition to full valve closure is less than or equal to 5.15 seconds, regardless of the individual instrument response time or valve stroke time, the conclusions of the stretch power accident analysis, which were previously accepted by the staff, are applicable.

The above specified values for MSIV and MFIV stroke times are FSAR design values and are considered to be maximum allowable stroke times. In order to avoid confusion for the TS values, the staff amended the applicable Bases statements to amplify this salient point. In addition, since the TS references 4.0.5, the licensee's Inservice Testing Program should also make this point clear. Any increase in stroke time beyond the maximum allowable values would call for valve correction action. This Bases statement change was discussed with and agreed to by the licensee.

The staff would prefer the valve total closure time and the instrument response time to be measured at the same point of time (e.g., a refueling outage) in order to ascertain the current stroke time. However, the staff will not require this in order to give the licensee operational flexibility. Adhering to maximum allowable stroke times before corrective action is undertaken will suffice.

The proposed changes would also revise the wording used in SRs 4.7.1.5 and 4.7.1.6. The types, frequencies and conditions of tests currently delineated in these sections conform with the testing requirements of the ASME Code, 1980 edition, committed to in SR 4.0.5. Hence, by referencing SR 4.0.5 in the MSIV and MFIV SRs 4.7.1.5 and 4.7.1.6, respectively, the inservice testing required by the ASME Code Article IWV-3410 and applicable addenda as incorporated in the licensee's IST Program, together with the corresponding response times, become the SRs for the Limiting Conditions for Operation (LCO) for MSIVs and MFIVs. The staff finds this acceptable.

SUMMARY

The modifications to the Technical Specifications proposed in this amendment by FPL, for the St. Lucie Plant, Unit 2, concerning MSIV and MFIV surveillance requirements, are judged by the NRC staff to be adequate and acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes to a surveillance requirement. The staff has determined that the amendment involves 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 published a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendment meets 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 the amendment.

CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: September 22, 1988

Principal Contributors:

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