

Docket No. 50-250

JUNE 2 1978

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Florida Power & Light Company
 ATTN: Dr. R. E. Uhrig
 Vice President
 PO Box 529100
 Miami, Florida 33152

Gentlemen:

The Commission has issued the enclosed Amendment No. 36 to Facility Operating License No. DPR-31 for the Turkey Point Nuclear Generating Unit No. 3. The amendment is in response to your application dated May 8, 1978.

This operating license amendment permits continued operation of Turkey Point Unit No. 3 for two months in addition to the six equivalent full-power months of operation authorized by Amendment No. 32 dated January 31, 1978. Item 5 in paragraph 3.E of the license has been amended to require that you either: (1) shutdown at the end of eight equivalent full-power months of operation and inspect the steam generators, if an inspection of the steam generators has not been performed with this eight month period, or (2) submit an acceptable analysis of the susceptibility for stress corrosion cracking of tubing to explicitly justify continued operation of Unit No. 3 beyond the authorized eight equivalent months of operation. The analysis justifying continued operation must be submitted at least 45 days prior to the expiration date of the authorized period of operation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by

A. Schwencer, Chief
 Operating Reactors Branch #1
 Division of Operating Reactors

Enclosures and cc's:
 See next page

OFFICE >	ORB #1	OELD	ORB #1			
SURNAME >	MGrotenhuis		ASchwencer			
DATE >	6/8/78	6/1/78	6/2/78			

per OELD
per Grotenhuis
consumed on cover + assigned

CONST/1

Docket No. 50-250

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Florida Power & Light Company
 ATTN: Dr. R. E. Uhrig
 Vice President
 P. O. Box 529100
 Miami, Florida 33152

Gentlemen:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-31 for the Turkey Point Nuclear Generating Unit No. 3. The amendment is in response to your application dated May 8, 1978.

This operating license amendment permits continued operation of Turkey Point Unit No. 3 for two months in addition to the six equivalent full-power months of operation authorized by Amendment No. 32 dated January 31, 1978. Item 5 in paragraph 3.E of the license now requires that you either: (1) shutdown at the end of eight equivalent full-power months of operation and inspect the steam generators, if an inspection of the steam generators has not been performed with this eight month period, or (2) submit an acceptable analysis of the susceptibility for stress corrosion cracking of tubing to explicitly justify continued operation of Unit No. 3 beyond the authorized eight equivalent months of operation. The analysis justifying continued operation must be submitted at least 45 days prior to the expiration date of the authorized period of operation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

A. Schwencer, Chief
 Operating Reactors Branch #1
 Division of Operating Reactors

Enclosures and CC's:
 See next page

PER CONNECTIONS ON MARK - VAV

OFFICE >	ORB #1 MGrotenuuis	OELD S. GOLDBERG	ORB #1 ASchwencer			
BURNNAME >						
DATE >	5/30/78	5/31/78	1/78			



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

June 2, 1978

Docket No. 50-250

Florida Power & Light Company
ATTN: Dr. R. E. Uhrig
Vice President
PO Box 529100
Miami, Florida 33152

Gentlemen:

The Commission has issued the enclosed Amendment No.36 to Facility Operating License No. DPR-31 for the Turkey Point Nuclear Generating Unit No. 3. The amendment is in response to your application dated May 8, 1978.

This operating license amendment permits continued operation of Turkey Point Unit No. 3 for two months in addition to the six equivalent full-power months of operation authorized by Amendment No. 32 dated January 31, 1978. Item 5 in paragraph 3.E of the license has been amended to require that you either: (1) shutdown at the end of eight equivalent full-power months of operation and inspect the steam generators, if an inspection of the steam generators has not been performed with this eight month period, or (2) submit an acceptable analysis of the susceptibility for stress corrosion cracking of tubing to explicitly justify continued operation of Unit No. 3 beyond the authorized eight equivalent months of operation. The analysis justifying continued operation must be submitted at least 45 days prior to the expiration date of the authorized period of operation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

A handwritten signature in cursive script, appearing to read "A. Schwencer".

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures and cc's:
See next page

Enclosures:

1. Amendment No. 36 to DPR-31
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:

Mr. Robert Lowenstein, Esquire
Lowenstein, Newman, Reis & Axelrad
1025 Connecticut Avenue, NW
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Washington, D.C. 20036

U.S. Environmental Protection Agency
Region VI Office
ATTN: EIS COORDINATOR
345 Courtland Street, NW
Atlanta, Georgia 30308

Environmental & Urban Affairs Library
Florida International University
Miami, Florida 33199

Mr. Norman A. Coll, Esquire
Steel, Hector and Davis
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Bank Building
Miami, Florida 33131

Florida Power & Light Company
ATTN: Mr. Henry Yaeger
Plant Manager
Turkey Point Plant
P. O. Box 013100
Miami, Florida 33101

Honorable Dewey Knight
County Manager of Metropoligan
Dade County
Miami, Florida 33130

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Tallahassee, Florida 32304

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U.S. Environmental Protection Agency
Room 645, East Tower
401 M Street, SW
Washington, D.C. 20460



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

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-250

TURKEY POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 36
License No. DPR-31

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power and Light Company (the licensee) dated May 8, 1978, 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, paragraph 3.E of Facility License No. DPR-31 is hereby amended to read as follows:

"E Steam Generator Inspections

5. In order to perform an inspection of the steam generators, Unit No. 3 shall be brought to the cold shutdown condition within eight equivalent full-power months of operation from February 1, 1978, unless: (1) an inspection of the steam generators is performed within this eight month period as a result of the requirements in 2, 3 and 4 above, or (2) an acceptable analysis of the susceptibility for stress corrosion cracking of tubing is submitted to explicitly justify continued operation of Unit No. 3 beyond the authorized eight equivalent months of operation. Any analysis justifying continued operation must be submitted at least 45 days prior to the expiration date of the authorized eight equivalent months of operation. For the purpose of this requirement, equivalent operation is defined as operation with a primary coolant temperatures greater than 350°F."
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Date of Issuance: June 2, 1978



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 36 TO LICENSE NO. DPR-31

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-250

Introduction/Background

By letter dated May 8, 1978, Florida Power & Light Company (FPL) submitted information to justify continued operation of Turkey Point Unit No. 3 for an additional two (2) equivalent months from February 1, 1978, beyond the six (6) months currently authorized License Amendment No. 32, dated January 31, 1978. The basis for establishing a six month period of operation in License Amendment No. 32 was the preventive tube plugging performed by FPL under an accepted plugging criteria implemented following the last inspection of the steam generators completed in December 1977, along with an analysis of the information developed as a result of the steam generator tube inspections conducted in Turkey Point, Unit No. 3, in November and December 1977. The criterion for preventive tube plugging was determined from the predicted growth of regions in the tube support plate in which the severity of tube denting would make tubes in these regions susceptible to stress corrosion cracking. Specifically, the rate of growth of these regions was one-third distance between tube rows per month of equivalent power operation for tubes in columns 14 thru 80 and two-thirds distance between tube rows per month in columns 1 thru 13 and 81 thru 94.

Discussion

The licensee has used the progression of flow slot closure in the worst steam generator of Turkey Point 4 (generator B) to predict the condition that will exist in the worst steam generator of Turkey Point 3 (generator B) at the end of the currently authorized six equivalent* full power months (EFPM) of operation. The progression of flow slot closure in steam generator B of Turkey Point 3 is approximately six months behind that observed in generator B of Turkey Point 4. Based on experience with the most affected steam generator (steam generator B) on Turkey Point 4 gained during the last inspection, FPL estimates that at eight (8) EFPM

*For purposes of this SER, equivalent operation is defined as operation with a primary coolant temperature greater than 350°F.

from the start of the currently authorized operating period there will be 9 tubes restricting passage of a 0.540 inch eddy current probe and 193 unplugged tubes within the 17.5% hoop strain contour in the tubelane region of Turkey Point 3 generator B. Assuming the 9 tubes restricting passage of a 0.540 inch probe developed thru-wall cracks during a postulated main steam line break (MSLB), the licensee has estimated a maximum primary to secondary leakage rate of 1.2 gpm. Assuming all 193 unplugged tubes within the 17.5% hoop strain contour develop thru-wall cracks during a postulated MSLB accident, FPL estimates the maximum leakage rate to be less than 10 gpm.

Reference has been made by FPL to a previous inspection report on Turkey Point Unit 4, of an analysis of primary to secondary leakage assuming a leak rate of 10 gpm concurrent with a MSLB. The analysis shows that such low leakage rates during a MSLB would have a negligible effect on primary system thermal hydraulic parameters, the DNBR, the percent of coolant volume lost by either contraction or leakage, or the time to terminate the core transient. The licensee stated that this analysis also applies to Turkey Point 3. Additionally, it is stated that LOCA effects previously analyzed for Turkey Point 4 still apply and, therefore, the effect of secondary to primary leakage during a LOCA would be negligible relative to primary system thermal hydraulic parameters when compared to the effects of the LOCA on these parameters.

Based on the information discussed above, FPL concludes that Turkey Point 3 can be safely operated for an additional two (2) equivalent months beyond the currently authorized six (6).

Evaluation

The licensee submitted leakage rate calculations, for conditions that would be expected during a postulated MSLB accident. These calculations are based on the assumptions that 1) only tubes predicted to restrict passage of a 0.540 inch probe are in a state of incipient failure, and 2) all tubes near the tubelane predicted to lie within the 17.5% hoop strain contour could develop thru-wall cracks. The NRC staff believes that the first assumption may be too optimistic. Additionally, partial cracking of the support plate would complicate the methodology that was relied upon for the prediction of the increase in denting in tubes, near the cracked regions, not anticipated to restrict a 0.540 inch probe. Therefore, in order to bound the number of tubes that could possibly develop thru-wall cracks, we conservatively assume that all tubes predicted to be within the 17.5% hoop strain contour are in a state of incipient cracking and would crack through when subjected to the expected pressure differentials during a postulated MSLB accident. This assumption is conservative in that successive inspection results indicated that not all tubes within the predicted boundary (17.5% strain) actually restrict the 0.540 inch probe. Based on the above assumption, the maximum leakage rate estimated by the staff would be 10.3 gpm, i.e., 192 tubes develop thru-wall cracks and leak at 0.05 gpm during a postulated MSLB accident and one tube is

assumed to be leaking at a 0.3 gpm rate which increases to 0.7 gpm during the accident. This estimated maximum leakage rate (10.3 gpm) is slightly greater than the 10 gpm that was previously analyzed for the consequences during a MSLB. However, we feel that it is extremely conservative to assume that all 193 tubes would simultaneously develop thru-wall cracks and, therefore, the leakage rate during a postulated MSLB accident would remain below 10 gpm. Therefore, the conclusions reached by the licensee remain valid and the NRC staff has concluded the following:

1. The primary degradation mechanism in Turkey Point 3 steam generators is associated with the denting phenomenon and the tube cracking is expected to occur at tube/support plate intersections (since all row 1 tubes have been previously plugged). The type of cracks associated with tube denting are constrained by the support plate, and will not burst open during a MSLB accident.
2. The leak rate associated with these cracks is very small. The estimated leakage rate of 0.05 gpm per tube under accident loads is reasonable conservative. This leakage rate has been determined experimentally by Westinghouse.²
3. The number of tubes involved in the worst steam generator (Steam Generator B) on Unit 4, i.e., tubes containing 80 to 100% partial thru-wall cracks, will most likely be bounded by the number of unplugged tubes predicted to lie within the 17.5% strain contour. Based on past inspection results of this steam generator, projected growth of the 17.5% hoop strain contour gives a reasonable indication of the extent of progression of 0.540 inch restricted tubes away from the flow slot area. In addition, inspection results from Turkey Point Unit 3 and other operating steam generators indicate that not all tubes within the predicted strain contour are found to restrict the 0.540 inch probe.
4. Therefore, the total leakage rate in the affected steam generator would most likely not exceed 10 gpm.
5. A primary to secondary leak rate of 10 gpm will have a negligible effect on primary system thermal hydraulic parameters, the DNB ratio, the percentage of reactor coolant volume lost by leakage, and the time to terminate the core transient during a postulated MSLB accident.
6. The effect of secondary to primary leakage during a LOCA would be negligible relative to primary system thermal hydraulic parameters when compared to the effects of the LOCA itself on these parameters.

7. An additional two (2) equivalent months of operation of Turkey Point Unit 3 is therefore acceptable.

For the foregoing reasons, we conclude that an additional two months of operation, under the constraints imposed by the existing facility operating license, will not significantly change the basic conclusions stated in the previous safety evaluation report³ attached to License Amendment No. 32 on January 31, 1978.

Environmental Consideration

We have determined that the amendments do 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 amendments involve an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and 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 amendments 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 amendments 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: June 2, 1978

References

1. Letter from R. E. Uhrig to NRC dated March 1, 1978.
2. Letter from C. M. Stalling VEPCO to B. C. Rusche NRC dated March 25, 1977 (Docket No. 50-280).
3. Letter to FPL granting Amendment No. 32 to DPR-31 dated January 31, 1978.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-250

FLORIDA POWER AND LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 36 to Facility Operating License No. DPR-31, issued to Florida Power and Light Company, for operation of the Turkey Point Nuclear Generating Unit No. 3 located in Dade County, Florida. The amendment is effective as of the date of issuance.

The amendment to the operating license will extend the allowed continued operation of Turkey Point Unit No. 3 from six equivalent full-power months of operation (EFPM) beyond February 1, 1978, as authorized by Amendment No. 32 to Facility Operating License No. DPR-31 issued on January 31, 1978, at which time the steam generators shall be inspected, unless (1) an inspection of the steam generators has previously been performed within this eight EFPM period or (2) an acceptable analysis of the susceptibility for stress corrosion cracking of tubing is submitted to explicitly justify continued operation beyond this eight EFPM period.

The application for the 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 impact 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 May 8, 1978, (2) Amendment No.36 to License No. DPR-31, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW Washington, DC and at the Environmental & Urban Affairs Library, Florida International University, Miami, Florida 33199. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 2nd day of June 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors