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December 5, 1990

Docket Nos. 50-269, 50-270
and 50-287

Posted
Amdt. 186 to DPR-47

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
P.O. Box 1007
Charlotte, North Carolina 28201-1007

Dear Mr. Tucker:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 186, 186 AND 183 TO FACILITY OPERATING LICENSES DPR-38, DPR-47, and DPR-55 - OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (TACS 77237/77238/77239)

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 186, 186 and 183 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units 1, 2 and 3. These amendments consist of changes to the Station's Technical Specifications (TSs) in response to your request dated July 19, 1990.

The amendments revise TS 2.3 to establish a revised Reactor Protective System trip setpoint for the Reactor Coolant Pump monitors.

A copy of our Safety Evaluation is also enclosed. Notice of issuance of the enclosed amendments will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/S/

Leonard A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 186 to DPR-38
2. Amendment No. 186 to DPR-47
3. Amendment No. 183 to DPR-55
4. Safety Evaluation

cc w/enclosures:
See next page

LA:PDII3	PM:PDII3	PM:PDII3	AC:SRXB	OGC	D:PDII3
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Mr. H. B. Tucker
Duke Power Company

Oconee Nuclear Station
Units Nos. 1, 2 and 3

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

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 186
License No. DPR-38

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

   A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility) Facility Operating License No. DPR-38 filed by the Duke Power Company (the licensee) dated July 19, 1990, 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 set forth in 10 CFR Chapter I;

   D. The issuance of this license 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, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B. of Facility Operating License No. DPR-38 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 186, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: December 5, 1990

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

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 186
License No. DPR-47

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

   A. The application for amendment to the Oconee Nuclear Station, Unit 2 (the facility) Facility Operating License No. DPR-47 filed by the Duke Power Company (the licensee) dated July 19, 1990, 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 set forth in 10 CFR Chapter I;

   D. The issuance of this license 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, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B. of Facility Operating License No. DPR-47 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 186, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: December 5, 1990

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

DUKE POWER COMPANY

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 183
License No. DPR-55

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

   A. The application for amendment to the Oconee Nuclear Station, Unit 3 (the facility) Facility Operating License No. DPR-55 filed by the Duke Power Company (the licensee) dated July 19, 1990, 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 set forth in 10 CFR Chapter I;

   D. The issuance of this license 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, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B. of Facility Operating License No. DPR-55 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 183, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: December 5, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 186

FACILITY OPERATING LICENSE NO. DPR-38

DOCKET NO. 50-269

AND

TO LICENSE AMENDMENT NO. 186

FACILITY OPERATING LICENSE NO. DPR-47

DOCKET NO. 50-270

AND

TO LICENSE AMENDMENT NO. 183

FACILITY OPERATING LICENSE NO. DPR-55

DOCKET NO. 50-287

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain a vertical line indicating the area of change.

Remove Pages	Insert Pages
2.3-1	2.3-1
2.3-7	2.3-7

2.3 LIMITING SAFETY SYSTEM SETTINGS, PROTECTIVE INSTRUMENTATION

Applicability

Applies to instruments monitoring reactor power, reactor power imbalance, reactor coolant system pressure, reactor coolant outlet temperature, flow, number of pumps in operation, and high reactor building pressure.

Objective

To provide automatic protective action to prevent any combination of process variables from exceeding a safety limit.

Specification

The reactor protective system trip setpoints and the permissible bypasses for the instrument channels shall be as stated in Table 2.3-1 and Figure 2.3-2.

The pump monitors shall produce a reactor trip when a loss of two pumps occurs and the reactor is at power operation greater than 2.0% of rated power.

Bases

The reactor trip setpoints for reactor protective system (RPS) instrumentation are given in Table 2.3-1. The trip setpoints have been selected to ensure that the core and reactor coolant system are prevented from exceeding their safety limits. The various reactor trip circuits automatically open the reactor trip breakers whenever a parameter monitored by the RPS deviates from an allowed range. The RPS consists of four instrument channels for redundancy. The plant safety analyses are based on the trip setpoints given in Table 2.3-1 plus calibration and instrumentation errors.

Nuclear Overpower

A reactor trip at high power level (neutron flux) is provided to prevent damage to the fuel cladding from reactivity excursions too rapid to be detected by pressure and temperature measurements.

During normal plant operation with all reactor coolant pumps operating, a reactor trip is initiated when the reactor power level reaches 105.5% of rated power. Adding to this the possible variation in the trip setpoint due to calibration and instrument errors, the maximum actual power at which a trip would be actuated could be 112%, which is the value in the safety analysis. (1)

TABLE 2.3-1

Reactor Protective System Trip Setting Limits

	RPS Trip	RPS Trip Setpoint	Shutdown Bypass
1.	Nuclear Overpower	105.5% Rated Power	5.0% Rated Power (1)
2.	Flux/Flow/Imbalance	1.07	Bypassed
3.	Pump Monitors	At Power Operation > 2.0% Rated Power and loss of two pumps	Bypassed
4.	High Reactor Coolant System Pressure	2355 psig	1720(2)
5.	Low Reactor Coolant System Pressure	1800 psig	Bypassed
6.	Variable Low Reactor Coolant System Pressure	P (psig) = (11.14 T_{out} - 4706)(3)	Bypassed
7.	High Reactor Coolant Temperature	618°F	618°F
8.	High Reactor Building Pressure	4 psig	4 psig

(1) Administratively controlled reduction set only during reactor shutdown.

(2) Automatically set when other segments of the RPS are bypassed.

(3) T_{out} is in degreas Fahrenheit (°F).

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 186TO FACILITY OPERATING LICENSE DPR-38

AMENDMENT NO.186 TO FACILITY OPERATING LICENSE DPR-47

AMENDMENT NO. 183TO FACILITY OPERATING LICENSE DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

DOCKET NOS. 50-269, 50-270 AND 50-287

1.0 INTRODUCTION

By letter dated July 19, 1990, Duke Power Company (the licensee) proposed changes to the Technical Specifications (TSs) for the Oconee Nuclear Station, Units 1, 2 and 3. The proposed changes would revise pages 2.3-1 and 2.3-7 of TS 2.3 to establish a revised reactor trip setpoint for the reactor coolant pump monitors. Specifically, this revision would require the pump monitors to cause a reactor trip when two pumps are inoperable and the reactor is operating at greater than 2.0% full power instead of the current requirement which considers a power level greater than 0.0% of the rated power as the setpoint. This change was prompted by a recent event (Licensee Event Report 269/90-06, May 30, 1990) when a reactor trip was caused by electrical noise in the excore detector signal. This electrical noise caused the 0.0% full power setpoint to be exceeded. The revision will increase the setpoint to greater than 2.0% full power for the pump monitor trip function and assure avoidance of future spurious reactor trips during cooldowns with two reactor coolant pumps in operation.

2.0 EVALUATION

The NRC staff has evaluated the proposed change to TS 2.3 which would require pump monitors to produce a reactor trip when less than three pumps are operating and the reactor is at power operation greater than 2.0% full power as compared to the current 0.0% full power level setpoint. The licensee has determined that the proposed change would provide adequate margin to account for electrical noise in the excore detection signal during subcritical conditions.

The licensee has evaluated the effects of the reduction of coolant flow as a result of reactor coolant pump failures by addressing the applicable analyses addressed in Section 15.6 of the Final Safety Analysis Report (FSAR). The evaluation of loss of reactor coolant flow resulting from malfunction of reactor coolant pumps or their power supply establishes the minimum departure from nucleate boiling ratio (DNBR) as the controlling reactor protection criterion. Specifically, the DNBR is to be not less than 1.3 at any time during the transient. The accident evaluated in Section 15.6 of the FSAR considers the loss of all four reactor coolant pumps leading to the loss of all forced flow from a beginning power level of 108%. Operation at 2% power with two reactor coolant pumps is well below what the equivalent power for this flow rate would

be. Therefore, loss of all forced flow from a power level of 2% with two reactor coolant pumps is clearly bounded by the accident analysis in Section 15.6, which shows that DNBR does not decrease below 1.3 as a result of the transient. Therefore, the proposed changes to TS 2.3 will not cause a condition during which the DNBR will reach a value of 1.3 or less.

In addition, the licensee has evaluated partial pump coastdowns and has established that the limiting transient for the determination of the flux/flow ratio is the coastdown of two reactor coolant pumps from full power initial conditions. However, the pump monitor trip function generates a reactor trip signal earlier than the flux/flow trip function. Since the analysis of a partial loss of flow accident with a trip generated by the pump monitor is more conservative than the analysis for a reactor trip on flux/flow alone, the proposed increase in the pump monitor setpoint will have no impact on the partial loss of reactor coolant flow analyses, and the proposed setpoint change will have no impact on the licensing basis safety analyses for the Oconee Nuclear Station. Therefore, the TS changes are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. We have 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 these amendments involve no significant hazards consideration, and there has been no public comment on such finding. Accordingly, the 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.

4.0 CONCLUSION

The Commission's proposed determination that the amendments involve no significant hazards consideration was published in the Federal Register (55 FR 34368) on August 22, 1990. The Commission has consulted with the State of South Carolina. No public comments were received, and the State of South Carolina did not have any comments.

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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Frank Rinaldi, PDII-3/DRP-I/II
Leonard A. Wiens, PDII-3/DRP-I/II

Dated: December 5, 1990