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

Duke Power Company
ATTN: Mr. William O. Parker, Jr.
Vice President - Steam Production
Post Office Box 2178
422 South Church Street
Charlotte, North Carolina 28242

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 48, 48 and 45 for License Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Unit Nos. 1, 2 and 3. These amendments consist of changes to the station's common Technical Specifications and are in response to your application dated May 6, 1977.

These amendments revise the common Technical Specifications to increase the check frequency of the power range amplifier to each shift in Technical Specification 4.1 and Table 4.1-1, and to limit calibration of the power range amplifier to when the steady-state heat balance power exceeds the nuclear instrumentation power by more than 2 percent in Table 4.1-1.

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

Sincerely,

151

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

Enclosures:

1. Amendment No. 48 to DPR-38
2. Amendment No. 48 to DPR-47
3. Amendment No. 45 to DPR-55
4. Safety Evaluation
5. Notice

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

October 28, 1977

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

Duke Power Company
ATTN: Mr. William O. Parker, Jr.
Vice President - Steam Production
Post Office Box 2178
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These amendments revise the common Technical Specifications to increase the check frequency of the power range amplifier to each shift in Technical Specification 4.1 and Table 4.1-1, and to limit calibration of the power range amplifier to when the steady-state heat balance power exceeds the nuclear instrumentation power by more than 2 percent in Table 4.1-1.

Copies of the Safety Evaluation and 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:

1. Amendment No. 48 to DPR-38
2. Amendment No. 48 to DPR-47
3. Amendment No. 45 to DPR-55
4. Safety Evaluation
5. Notice

cc: Mr. William L. Porter
Duke Power Company
P. O. Box 2178
422 South Church Street
Charlotte, North Carolina 28242

J. Micheal McGarry, III, Esquire
DeBevoise & Liberman
700 Shoreham Building
806-15th Street, NW.,
Washington, D.C. 20005

Oconee Public Library
201 South Spring Street
Walhalla, South Carolina 29691

Honorable James M. Phinney
County Supervisor of Oconee County
Walhalla, South Carolina 29621

Office of Intergovernmental Relations
116 West Jones Street
Raleigh, North Carolina 27603

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

U. S. Environmental Protection Agency
Region IV Office
ATTN: EIS COORDINATOR
345 Coutland Street, N. E.
Atlanta, Georgia 30308



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

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 48
License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that
 - A. The application for amendments by Duke Power Company (the licensee) dated May 6, 1977, 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, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Facility License No. DPR-38 is hereby amended to read as follows:

"3.B Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 48, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications."

3. This license amendment is effective within 30 days after the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 28, 1977



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

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 48
License No. DPR-47

1. The Nuclear Regulatory Commission (the Commission) has found that
 - A. The application for amendments by Duke Power Company (the licensee) dated May 6, 1977, 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, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Facility License No. DPR-47 is hereby amended to read as follows:

"3.B Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.48, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications."

3. This license amendment is effective within 30 days after the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 28, 1977



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

DUKE POWER COMPANY

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 45
License No. DPR-55

1. The Nuclear Regulatory Commission (the Commission) has found that
 - A. The application for amendments by Duke Power Company (the licensee) dated May 6, 1977, 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, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Facility License No. DPR-55 is hereby amended to read as follows:

"3.B Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.45 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications."

3. This license amendment is effective within 30 days after the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 28, 1977

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 48 TO DPR-38

AMENDMENT NO. 48 TO DPR-47

AMENDMENT NO. 45 TO DPR-55

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

Revise Appendix A as follows:

Remove pages 4.1-1 and 4.1-3 and replace with identically numbered pages.

4.1 OPERATIONAL SAFETY REVIEW

Applicability

Applies to items directly related to safety limits and limiting conditions for operation.

Objective

To specify the frequency and type of surveillance to be applied to unit equipment and conditions.

Specification

- 4.1.1 The frequency and type of surveillance required for Reactor Protective System and Engineered Safety Feature Protective System instrumentation shall be as stated in Table 4.1-1.
- 4.1.2 Equipment and sampling test shall be performed as detailed in Tables 4.1-2 and 4.1-3.
- 4.1.3 Using the Incore Instrumentation System, a power map shall be made to verify expected power distribution at periodic intervals not to exceed ten effective full power days.

Bases

Failures such as blown instrument fuses, defective indicators, and faulted amplifiers which result in "upscale" or "downscale" indication can be easily recognized by simple observation of the functioning of an instrument or system. Furthermore, such failures are, in many cases, revealed by alarm or annunciator action. Comparison of output and/or state of independent channels measuring the same variable supplements this type of built-in surveillance. Based on experience in operation of both conventional and nuclear systems, when the unit is in operation, the minimum checking frequency stated is deemed adequate for reactor system instrumentation.

Calibration is performed to assure the presentation and acquisition of accurate information. The nuclear flux (power range) channels amplifiers are calibrated (during steady-state operating conditions) when core thermal power exceeds indicated neutron power by more than two percent. During non-steady-state operation, the nuclear flux channels amplifiers are calibrated each shift to compensate for instrumentation drift and changing rod patterns and core physics parameters.

Channels subject only to "drift" errors induced within the instrumentation itself can tolerate longer intervals between calibrations. Process system instrumentation errors induced by drift can be expected to remain within acceptable tolerances if recalibration is performed at the intervals specified.

Substantial calibration shifts within a channel (essentially a channel failure) are revealed during routine checking and testing procedures. Thus, the minimum calibration frequencies set forth are considered acceptable.

Table 4.1-1
INSTRUMENT SURVEILLANCE REQUIREMENTS

<u>Channel Description</u>	<u>Check</u>	<u>Test</u>	<u>Calibrate</u>	<u>Remarks</u>
1. Protective Channel Coincidence Logic	NA	MO	NA	
2. Control Rod Drive Trip Breaker	NA	MO	NA	
3. Power Range Amplifier	ES(1)	NA	(1)	(1) Heat balance check each shift. Heat balance calibration whenever indicated core thermal power exceeds neutron power by more than 2 percent.
4. Power Range	ES	MO	MO(1)(2)	(1) Using incore instrumentation. (2) Axial offset upper and lower chambers after each startup if not done previous week.
5. Intermediate Range	ES(1)	PS	NA	(1) When in service.
6. Source Range	ES(1)	PS	NA	(1) When in service.
7. Reactor Coolant Temperature	ES	MO	AN	
8. High Reactor Coolant Pressure	ES	MO	AN	
9. Low Reactor Coolant Pressure	ES	MO	AN	
10. Flux-Reactor Coolant Flow Comparator	ES	MO	AN	
11. Reactor Coolant Pressure Temperature Comparator	ES	MO	AN	

4.1-3 Amendments 48, 48 & 45



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 48 TO FACILITY LICENSE NO. DPR-38

AMENDMENT NO. 48 TO FACILITY LICENSE NO. DPR-47

AMENDMENT NO. 45 TO FACILITY LICENSE NO. DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNIT NOS. 1, 2 AND 3

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

Introduction

By letter dated May 6, 1977, Duke Power Company (licensee) requested a change to the common Technical Specifications incorporated in the operating licenses of Unit Nos. 1, 2 and 3 of the Oconee Nuclear Station.

Discussion

Section 4.1 of the current Oconee Nuclear Station Technical Specifications requires that a calibration check be performed on the Nuclear Instrumentation (NI) channels once per day and that a calibration be performed if the checks shows that the indicated neutron power is different from the thermal power as indicated by the steady state heat balance by more than 2 percent.

A recent review by the licensee, based on recommendations by the fuel vendor (B&W) on NI calibration data at Oconee revealed an instance in which the NI was not conservatively calculated. This was reported by letter dated May 4, 1977. This situation arose during power ascension from a maintenance shutdown. Between 50% and 90% of full power as determined by the heat balance, the NI was non-conservatively out of calibration by as much as 13.6%. This situation did not adversely affect reactor safety

since actual power was well below 100%. To avoid this situation in the future, the licensee is proposing an increase in the frequency of calibration checks to provide additional assurance that the NI channels do not widely move out of calibration. The licensee is also proposing to delete the requirement to recalibrate the NI channels when the NI power exceeds core thermal power since any difference in this direction would be conservative with respect to reactor protection.

Evaluation

We have reviewed the licensee's proposal to increase the frequency of calibration checks of the NI from once per day to once per shift, and, to delete the requirement to recalibrate the NI when the difference between the NI power and heat balance power is in the conservative direction.

The change in frequency will result in a check in calibration of the NI three times more often than currently being performed by the existing Technical Specifications. We conclude that the additional surveillance will provide additional assurance that the NI is not out of calibration in a non-conservative direction, and is therefore acceptable.

The licensee has also proposed to delete the requirement to perform recalibration of the NIs when the heat balance power is less than the NI power. This change would reduce the number of recalibrations the licensee would have to perform, particularly, if the increased frequency of checks resulted in discovery of the NI channels out of calibration.

The existing Technical Specifications require a recalibration even when the power difference is in a conservative direction. With this change, there will always be at least equal or greater margin between actual thermal conditions and thermal limits compared to the existing Technical Specifications. We have reviewed the impact of this change on core parameters, such as quadrant tilt, and found the impact to be insignificant.

Based on our review of these changes, we conclude that they are acceptable.

Environmental Consideration

We have determined that these 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 these 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, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

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: October 28, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

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

DUKE POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 48, 48 and 45 to Facility Operating License Nos. DPR-38 DPR-47, and DPR-55, respectively, issued to Duke Power Company which revised the Technical Specifications for operation of the Oconee Nuclear Station, Unit Nos. 1, 2 and 3, located in Oconee County, South Carolina. The amendments are effective within 30 days after the date of issuance.

The amendments revise the common Technical Specifications to increase the check frequency of the power range amplifier to each shift in Technical Specification 4.1 and Table 4.1-1, and, to limit calibration of the power range amplifier to when the steady-state heat balance power exceeds the nuclear instrumentation power by more than 2 percent in Table 4.1-1.

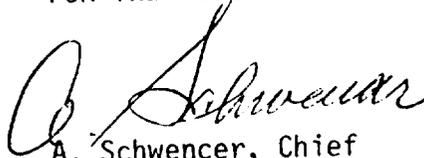
The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

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

For further details with respect to this action, see (1) the application for amendments dated May 6, 1977, (2) Amendments Nos. 48, 48 and 45 to License Nos. DPR-38, DPR-47 and DPR-55, respectively, 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, D.C. and at the Oconee County Library, 201 South Spring Street, Walhalla, South Carolina 29691. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 28th day of October 1977.

FOR THE NUCLEAR REGULATORY COMMISSION



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