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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 No. 12, Technical Specification Change No. 22 for License No. DPR-38; Amendment No. 12, Technical Specification Change No. 17 for License No. DPR-47; and Amendment No. 9, Technical Specification Change No. 9 for License No. DPR-55, for the Oconee Nuclear Station, Units 1, 2 and 3. These amendments are in response to your request dated June 10, 1975.

These amendments (1) allow the non-preferential use of either the in-core or out-of-core nuclear detector systems to determine quadrant power tilt and (2) make reference to explanatory figures as a substitution for deleted portions of the text.

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

Sincerely,

/s/ Alfred Bunger

Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

Enclosures:
1. Amendment No. 12 to DPR-38
2. Amendment No. 12 to DPR-47
3. Amendment No. 9 to DPR-55
4. Safety Evaluation
5. Federal Register Notice

cc w/enclosures:
See next page

OFFICE ➤	RL:ORB#1	TR	OELD	RL:ORB#1		
SURNAME ➤	CTrammell:bl			RAPurple		
DATE ➤	8/12/75	8/ /75	8/ /75	8/ /75		

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

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cc w/enclosures:
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Conner, Hadlock & Knotts
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Honorable Reese A. Hubbard
County Supervisor of Oconee County
Walhalla, South Carolina 29621

cc w/enclosures & incoming:
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State Clearinghouse
Office of the Governor
Division of Administration
1295 Pendleton Street
4th Floor
Columbia, South Carolina 29201

Mr. Dave Hopkins
Environmental Protection Agency
1421 Peachtree Street, NE
Atlanta, Georgia 30309

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. 12
License No. DPR-38

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

   A. The application for amendment by Duke Power Company (the licensee) dated June 10, 1975, 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; and

   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.

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:

" B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 22 ."

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

FOR THE NUCLEAR REGULATORY COMMISSION

/s/ Alfred Burger

Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

Attachment:
Change No. 22 to the
Technical Specifications

Date of Issuance: AUG 29 1975

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. 12
License No. DPR-47

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

   A. The application for amendment by Duke Power Company (the licensee) dated June 10, 1975, 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; and

   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.

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:

" B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 17 ."

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

FOR THE NUCLEAR REGULATORY COMMISSION

/S/Alfred Burger

for Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

Attachment:
Change No. 17 to the
Technical Specifications

Date of Issuance: AUG 2 9 1975

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. 9
License No. DPR-55

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

   A. The application for amendment by Duke Power Company (the licensee) dated June 10, 1975, 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; and

   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.

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:

" B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 9 ."

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

FOR THE NUCLEAR REGULATORY COMMISSION

/s/ Alfred Benzer

for Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

Attachment:
Change No. 9 to the
Technical Specifications

Date of Issuance: AUG 2 9 1975

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 12 TO FACILITY LICENSE NO. DPR-38,
CHANGE NO. 22 TO TECHNICAL SPECIFICATIONS;

AMENDMENT NO. 12 TO FACILITY LICENSE NO. DPR-47,
CHANGE NO. 17 TO TECHNICAL SPECIFICATIONS;

AMENDMENT NO. 9 TO FACILITY LICENSE NO. DPR-55,
CHANGE NO. 9 TO TECHNICAL SPECIFICATIONS;

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

Revise Appendix A as follows:

Remove Pages	Insert Pages
1-4	1-4
3.5-27	3.5-27
3.5-28	--

1.5.5 Heat Balance Check

A heat balance check is a comparison of the indicated neutron power and core thermal power.

1.5.6 Heat Balance Calibration

An adjustment of the power range channel amplifiers output to agree with the core thermal power as determined by a heat balance on the secondary side of the steam generator considering all heat losses and additions.

1.6 POWER DISTRIBUTION

1.6.1 Quadrant Power Tilt

Quadrant power tilt is defined by the following equation and is expressed in percent.

$$100 \left(\frac{\text{Power in any core quadrant}}{\text{Average power of all quadrants}} - 1 \right)$$

22/17/9

1.6.2 Reactor Power Imbalance

Reactor power imbalance is the power in the top half of the core minus the power in the bottom half of the core expressed as a percentage of rated power. Imbalance is monitored continuously by the RPS using input from the power range channels. Imbalance limits are defined in Specification 2.1 and imbalance setpoints are defined in Specification 2.3.

1.7 CONTAINMENT INTEGRITY

Containment integrity exists when the following conditions are satisfied:

a. The equipment hatch is closed and sealed and both doors of the personnel hatch and emergency hatch are closed and sealed except as in b below.

b. At least one door of the personnel hatch and the emergency hatch is closed and sealed during refueling or during personnel passage through these hatches.

c. All non-automatic containment isolation valves and blind flanges are closed as required.

d. All automatic containment isolation valves are operable or locked closed.

e. The containment leakage determined at the last testing interval satisfies Specification 4.4.1.

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3.5.4 Incore Instrumentation

Applicability

Applies to the operability of the incore instrumentation system

Objective

To specify the functional and operational requirements of the incore instrumentation system.

Specification

3.5.4.1 At or above 80 percent of the power allowable for the existing reactor coolant pump operating combination, incore detectors shall be operable as necessary to meet the following:

a. For axial imbalance measurements:

At least three detectors in each of at least three strings shall lie in the same axial plane, with one plane in each axial core half. The axial planes in each core half shall be symmetrical about the core mid-plane. The detector strings shall not have radial symmetry.

b. For quadrant power tilt measurements:

22/17/9

At least two sets of at least four detectors shall lie in each axial core half. Each set of detectors shall lie in the same axial plane. The two sets in the same core half may lie in the same axial plane. Detectors in the same plane shall have quarter core radial symmetry.

3.5.4.2 If requirements of 3.5.4.1 are not met, power shall be reduced below 80 percent of the power allowable for the existing reactor coolant pump combination within eight hours and incore detector measurements shall not be used to determine axial imbalance or quadrant power tilt.

Bases

The operability of the incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. See Figures 3.5.4-1, 3.5.4-2, and 3.5.4-3 for satisfactory incore detector arrangements.

The safety of reactor operation at or below 80 percent of the power allowable for the reactor coolant pump combination(1) without the axial imbalance trip system has been determined by extensive 3-D calculations, and was verified during the physics startup testing program.

(1) FSAR, Section 4.1.1.3

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 12 TO FACILITY LICENSE NO. DPR-38
CHANGE NO. 22 TO TECHNICAL SPECIFICATIONS;

SUPPORTING AMENDMENT NO. 12 TO FACILITY LICENSE NO. DPR-47
CHANGE NO. 17 TO TECHNICAL SPECIFICATIONS;

SUPPORTING AMENDMENT NO. 9 TO FACILITY LICENSE NO. DPR-55
CHANGE NO. 9 TO TECHNICAL SPECIFICATIONS;

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

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

Introduction

By letter dated June 10, 1975, Duke Power Company (the licensee) requested a change in the Technical Specifications of Licenses DPR-38, DPR-47 and DPR-55, for the Oconee Nuclear Station, Units 1, 2 and 3. The proposed amendments would (1) allow the non-preferential use of either the in-core or out-of-core nuclear detector systems to determine quadrant power tilt and (2) make reference to explanatory figures as a substitution for deleted portions of the text.

Discussion

The present Technical Specifications require that quadrant power tilt be monitored on a minimum frequency of once every two hours during power operation above 15 percent of rated power. Should quadrant power tilt exceed 4 percent, except for physics tests, the quadrant tilt must be reduced to less than 4 precent within two hours or appropriate action, as discussed in Section 3.5.2.4 of the Technical Specifications, must be taken. The limits established, in conjunction with the control rod position limits, ensure that design peak heat rate criteria are not exceeded.

Quadrant power tilt is defined by the following equation, expressed in percent:

$$100\left(\frac{\text{Power in any core quadrant}}{\text{Average power in all quadrants}} - 1\right)$$

The power in a quadrant can be determined from the power range channel of the out-of-core system displayed on the console for that quadrant. The average power would be determined from an average of the outputs of the power range channels.

During normal plant operation, quadrant power tilt monitoring is performed, on demand, in the plant process computer. The two hour frequency requirement is met by using the manual calculation method when the computer is out of service. Due to the fact that there are only four power range channels, one for each quadrant of the core, the Technical Specifications provide for the use of the in-core detector system in the event one of the power range channels is out of service,

The plant process computer performs the quadrant power tilt calculations for both the power range channels and the in-core system as a source of data.

The licensee is requesting that in view of the fact that the in-core system is now authorized for use in determining power tilt when one power range channel is out of service, additional flexibility would be gained by allowing the selection of either system on a non-preferential basis for this purpose.

The licensee has also proposed changes to Section 3.5.4 of the Technical Specifications which would delete explanatory words regarding the minimum number of in-core detectors which must be used in the determination of axial imbalance and quadrant power tilt measurements. As a substitution for these deleted portions, reference would be made to Figures 3.5.4-1, 3.5.4-2 and 3.5.4-3 for satisfactory in-core detector arrangements.

Evaluation

The in-core detector system consists of 52 flux detector assemblies with 7 detectors per assembly. The system data is read out on the plant process computer and a backup readout system is provided for selected detectors. The in-core system is used to periodically calibrate the power range channels of the out-of-core detector system and, as discussed above, for the determination of quadrant power tilt in the event one power range channel is out of service. We conclude that by authorizing the use of either the in-core or out-of-core nuclear detector systems to determine quadrant power tilt on a non-preferential basis, there would be no relaxation in the requirements nor reduction in the accuracy of the calculations. Accordingly, we agree with the proposed amendment and have included the changes requested.

The proposed deletions in Section 3.5.4, Incore Instrumentation, involve explanatory words regarding the minimum number of incore detectors needed to perform axial and quadrant power tilt measurements. By making reference to Figures 3.5.4-1, 3.5.4-2 and 3.5.4-3, for the satisfactory incore detector arrangements, as proposed by the licensee, the equivalent is accomplished. We agree with this proposal and have therefore included the changes reflecting this.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does 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: AUG 2 9 1975

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

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments No. 12, 12 and 9 to Facility Operating Licenses No. DPR-38, DPR-47 and DPR-55, respectively, issued to Duke Power Company which revised Technical Specifications for operation of the Oconee Nuclear Station, Units 1, 2 and 3, located in Oconee County, South Carolina. The amendments are effective as of the date of issuance.

These amendments (1) allow the non-preferential use of either the in-core or out-of-core nuclear detector systems to determine quadrant power tilt and (2) make reference to explanatory figures as a substitution for deleted portions of the text.

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 is not required since the amendments do not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendments dated June 10, 1975, (2) Amendments No. 12, 12 and 9 to

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Licenses No. DPR-38, DPR-47 and DPR-55, with Changes No. 22 , 17 and 9, 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 Reactor Licensing.

Dated at Bethesda, Maryland, this AUG 2 9 1975

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

Alfred Burger, Acting Chief
Operating Reactors Branch #1
Division of Reactor Licensing

OFFICE ➤						
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DATE ➤						