

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

November 23, 1977

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. 53, 53 and 50 for License Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Unit Nos. 1, 2 and 3. These amendments are in response to your application dated November 9, 1977.

These amendments revise the Technical Specifications to allow operation of Oconee Unit 1 Cycle 4 at 100% full power with a flux tilt of 6.03% in an unrodded mode.

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

Sincerely,

Original signed by

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

Enclosures:

1. Amendment No. 53 to DPR-38
2. Amendment No. 53 to DPR-47
3. Amendment No. 50 to DPR-55
4. Safety Evaluation
5. Notice of Issuance

cc w/enclosures:
See next page

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x27433:tsb	DNeighbors	ASchwencer	RBAER			
SURNAME →						
DATE →	11/21/77	11/23/77	11/23/77	11/21/77		

Duke Power Company

- 2 -

November 23, 1977

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
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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. 53
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 November 9, 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.

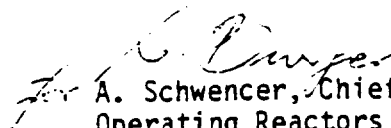
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Facility License No. DPR-38 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 53, 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


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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 23, 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. 53
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 November 9, 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.

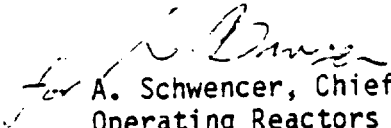
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.8 of Facility License No. DPR-47 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 53, 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


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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 23, 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. 50
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 November 9, 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.

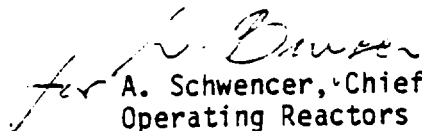
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Facility License No. DPR-55 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 50, 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


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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 23, 1977

ATTACHMENT TO LICENSE AMENDMENT NOS. 53, 53AND 50
FACILITY OPERATING LICENSE NOS. DPR-38, DPR-47 AND DPR-55
DOCKET NOS. 50-269, 50-270 AND 50-287

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered revised pages.

3.5-7
3.5-8
3.5-9
3.5-12
3.5-13
3.5-13a
3.5-18
3.5-18a
3.5-18b
3.5-b
3.5-21a
3.5-21b
3.5-23d
3.5-23e
4.1-1

- g. If within one (1) hour of determination of an inoperable rod, it is not determined that a 1%Δk/k hot shutdown margin exists combining the worth of the inoperable rod with each of the other rods, the reactor shall be brought to the hot standby condition until this margin is established.
- h. Following the determination of an inoperable rod, all rods shall be exercised within 24 hours and exercised weekly until the rod problem is solved.
- i. If a control rod in the regulating or safety rod groups is declared inoperable, power shall be reduced to 60 percent of the thermal power allowable for the reactor coolant pump combination.
- j. If a control rod in the regulating or axial power shaping groups is declared inoperable, operation above 60 percent of rated power may continue provided the rods in the group are positioned such that the rod that was declared inoperable is maintained within allowable group average position limits of Specification 3.5.2.2.a and the withdrawal limits of Specification 3.5.2.5.c.

3.5.2.3 The worths of single inserted control rods during criticality are limited by the restrictions of Specification 3.1.3.5 and the control rod position limits defined in Specification 3.5.2.5.

3.5.2.4 Quadrant Power Tilt

- a. Except for physics tests, if the maximum positive quadrant power tilt exceeds
 - 6.03% Unit 1, either the quadrant power tilt shall
 - 3.41% Unit 2
 - 3.41% Unit 3
 be reduced to less than
 - 6.03% Unit 1 within two hours or the
 - 3.41% Unit 2
 - 3.41% Unit 3
 following actions shall be taken:
 - (1) If four reactor coolant pumps are in operation, the allowable thermal power shall be reduced below the power level cutoff (as identified in specification 3.5.2.5) and further reduced by 2% of full power for each 1% tilt in excess of
 - 6.03% Unit 1
 - 3.41% Unit 2
 - 3.41% Unit 3
 - (2) If less than four reactor coolant pumps are in operation, the allowable thermal power for the reactor coolant pump combination shall be reduced by 2% of full power for each 1% tilt.

- (3) Except as provided in specification 3.5.2.4.b, the reactor shall be brought to the hot shutdown condition within four hours. If the quadrant power tilt is reduced to less than 6.03% Unit 1 within 24 hours.
3.41% Unit 2
3.41% Unit 3
- b. If the quadrant tilt exceeds 6.03% Unit 1 and there is simultaneous
3.41% Unit 2
3.41% Unit 3
indication of a misaligned control rod per Specification 3.5.2.2, reactor operation may continue provided power is reduced to 60% of the thermal power allowable for the reactor coolant pump combination.
- c. Except for physics test, if quadrant tilt exceeds 9.44% Unit 1,
9.44% Unit 2
9.44% Unit 3
a controlled shutdown shall be initiated immediately, and the reactor shall be brought to the hot shutdown condition within four hours.
- d. Whenever the reactor is brought to hot shutdown pursuant to 3.5.2.4.a(3) or 3.5.2.4.c above, subsequent reactor operation is permitted for the purpose of measurement, testing, and corrective action provided the thermal power and the power range high flux setpoint allowable for the reactor coolant pump combination are restricted by a reduction of 2 percent of full power for each 1 percent tilt for the maximum tilt observed prior to shutdown.
- e. Quadrant power tilt shall be monitored on a minimum frequency of once every two hours during power operation above 15 percent of rated power.

3.5.2.5 Control Rod Positions

- a. Technical Specification 3.1.3.5 does not prohibit the exercising of individual safety rods as required by Table 4.1-2 or apply to inoperable safety rod limits in Technical Specification 3.5.2.2.
- b. Except for physics tests, operating rod group overlap shall be $25\% \pm 5\%$ between two sequential groups. If this limit is exceeded, corrective measures shall be taken immediately to achieve an acceptable overlap. Acceptable overlap shall be attained within two hours or the reactor shall be placed in a hot shutdown condition within an additional 12 hours.
- c. Position limits are specified for regulating and axial power shaping control rods. Except for physics tests or exercising control rods, the regulating control rod insertion/withdrawal limits are specified on figures 3.5.2-1A1, (Unit 1); 3.5.2-1B1, 3.5.2-1B2 and 3.5.2-1B3 (Unit 2); 3.5.2-1C1, 3.5.2-1C2 and 3.5.2-1C3 (Unit 3) for four pump operation, and on figures 3.5.2-2A1, (Unit 1); 3.5.2-2B1, 3.5.2-2B2 and 3.5.2-2B3 (Unit 2); 3.5.2-2C1, 3.5.2-2C2 and 3.5.2-2C3 (Unit 3) for two or three

pump operation. Also, excepting physics tests or exercising control rods, the axial power shaping control rod insertion/withdrawal limits are specified on figures 3.5.2-4A1,

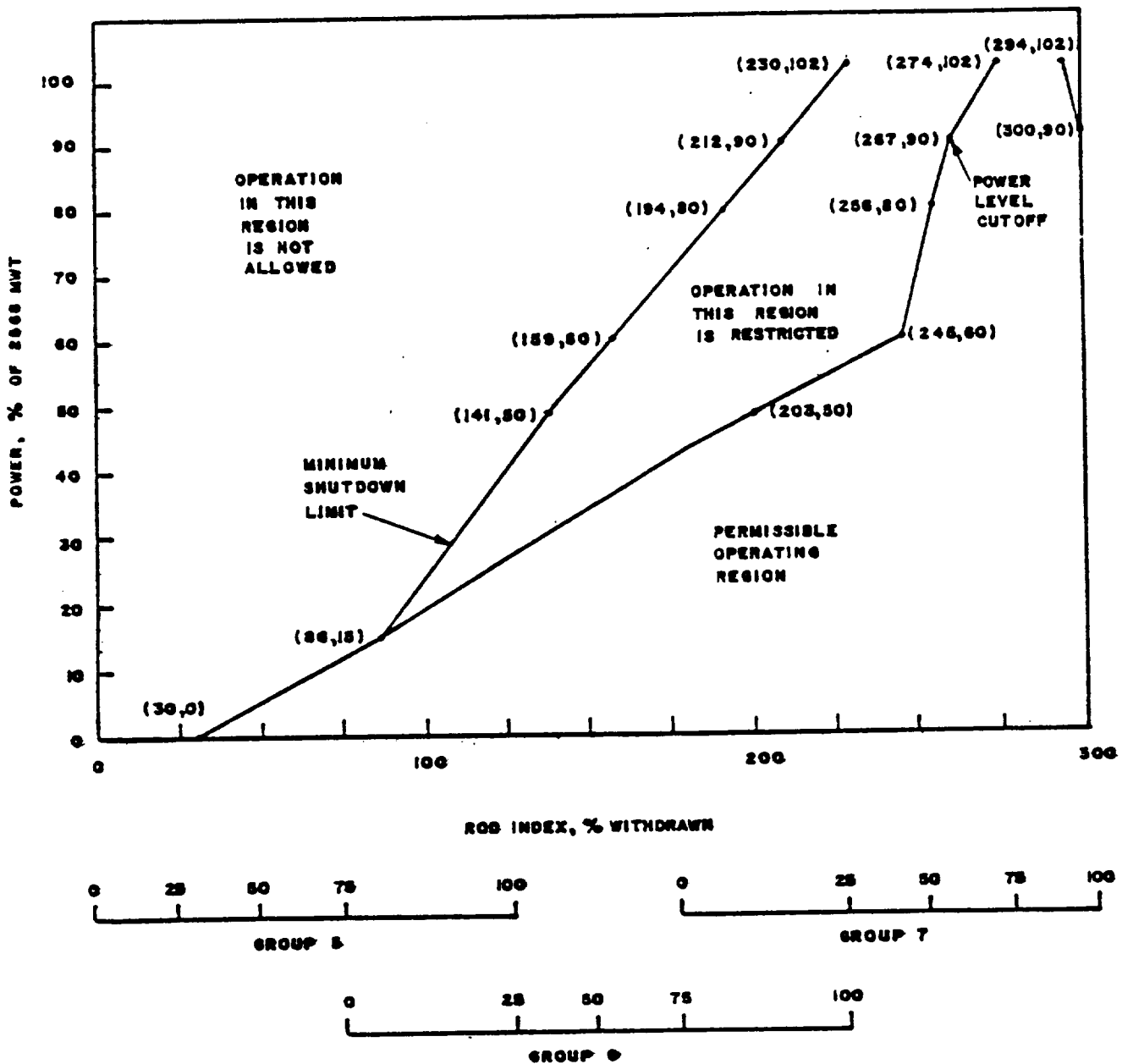
(Unit 1), 3.5.2-4B1, 3.5.2-4B2, and 3.5.2-4B3 (Unit 2), and 3.5.2-4C1, 3.5.2-4C2, and 3.5.2-4C3 (Unit 3). If the control rod position limits are exceeded, corrective measures shall be taken immediately to achieve an acceptable control rod position. An acceptable control rod position shall then be attained within two hours. The minimum shutdown margin required by Specification 3.5.2.1 shall be maintained at all times.

- d. Except for physics tests, power shall not be increased above the power level cutoff as shown on Figures 3.5.2-1A1, (Unit 1), 3.5.2-1B1, 3.5.2-1B2, and 3.5.2-1B3 (Unit 2), and 3.5.2-1C1, 3.5.2-1C2, 3.5.2-1C3 (Unit 3), unless the following requirements are met.

- (1) The xenon reactivity shall be within 10 percent of the value for operation at steady-state rated power.
- (2) The xenon reactivity worth has passed its final maximum or minimum peak during its approach to its equilibrium value for operation at the power level cutoff.

3.5.2.6 Reactor power imbalance shall be monitored on a frequency not to exceed two hours during power operation above 40 percent rated power. Except for physics tests, imbalance shall be maintained within the envelope defined by Figures 3.5.2-3A1, 3.5.2-3B1, 3.5.2-3B2, 3.5.2-3B3, 3.5.2-3C1, 3.5.2-3C2, and 3.5.2-3C3. If the imbalance is not within the envelope defined by these figures, corrective measures shall be taken to achieve an acceptable imbalance. If an acceptable imbalance is not achieved within two hours, reactor power shall be reduced until imbalance limits are met.

3.5.2.7 The control rod drive patch panels shall be locked at all times with limited access to be authorized by the manager or his designated alternate.



ROD INDEX IS THE PERCENTAGE SUM OF THE WITHDRAWAL OF GROUPS 5, 6 AND 7

OCONEE 1 CYCLE 4 ROD POSITION
LIMITS FOR FOUR PUMP OPERATION
FROM 0 TO 100 (+10) EFPD



OCONEE NUCLEAR STATION

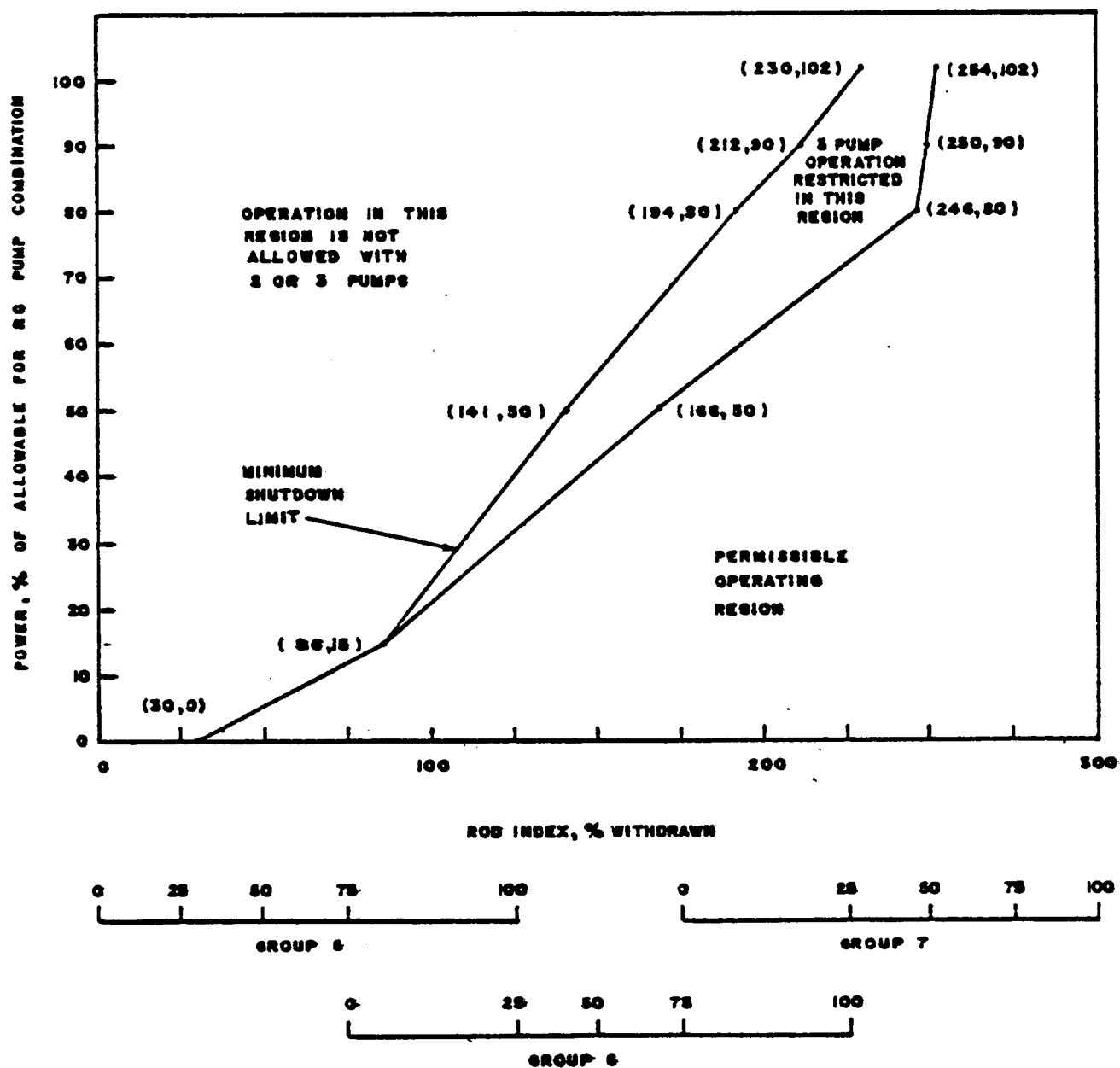
Figure 3.5.2-1A1

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(These figures will be provided after analyses
for operation of Oconee Unit 1 beyond 100 EFPD
is performed.)

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(These figures will be provided after analyses
for operation of Oconee Unit 1 beyond 100 EFPD
is performed.)



ROD INDEX IS THE PERCENTAGE SUM OF THE WITHDRAWAL OF GROUPS 5, 6 AND 7

3.5-18



OCONEE 1 CYCLE 4 ROD POSITION
LIMITS FOR TWO AND THREE PUMP
OPERATION FROM 0 TO 100 (± 10)
EFPD
OCONEE NUCLEAR STATION

Figure 3.5.2-2A1

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for operation of Oconee Unit 1 beyond 100 EFPD
is performed.)

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for operation of Oconee Unit 1 beyond 100 EFPD
is performed.)

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. In the case of Unit 1, the power distribution shall be monitored daily during power operation above 75% full power. In the event the power distribution cannot be obtained, power shall be reduced to 75% or less within the following 24 hours.

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 indicated neutron power and core thermal power differ by more than two percent. During non-steady-state operation, the nuclear flux channels amplifiers are calibrated daily 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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 53 TO LICENSE NO. DPR-38

AMENDMENT NO. 53 TO LICENSE NO. DPR-47, AND

AMENDMENT NO. 50 TO LICENSE NO. DPR-55

DUKE POWER COMPANY

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

Introduction

By letter dated November 9, 1977, Duke Power Company (the licensee) requested Technical Specification changes on quadrant flux tilt and control rod position limits to the Facility Operating License for the Oconee Nuclear Station, Unit 1, Cycle 4. The request was initiated by the licensee's desire for full power operation with quadrant neutron flux tilt (potential power peaking) which has been observed. On October 31, 1977, the staff issued amendments which allowed continued operation and testing with an increased flux tilt at 75% power with conservative restrictions on core thermal power, nuclear power trip setpoint, and rod position limits. With this continued operation and testing, the tilt has decreased to a value near the current Technical Specification limit for 100% power. The licensee has stated in the November 9, 1977 letter, that the requested change would provide a restriction on power peaking, and that the proposed operation is more desirable and prudent than the current Technical Specification limits on the basis of the power peaking restriction.

Evaluation

The licensee's analysis in support of the proposed Technical Specifications is for the first 100 effective full power days (EFPD) of operation. Analysis for operation beyond 100 EFPD will be supplied at a later date. The licensee has stated that the proposed Technical Specifications have been established with the same calculation models and methods as previously reviewed and found acceptable for Oconee 1 Cycle 4. The proposed Technical Specifications would allow operation in an unrodded mode (change in rod position limits) with a maximum quadrant tilt of 6.03%.

The rod position limits are based on the most limiting of the following three criteria: ECCS power peaking, shutdown margin, and potential ejected rod worth. The quadrant tilt limits are established to prevent the linear heat generation rate peaking beyond analyzed conditions. A discussion of these considerations follow.

The licensee performed the power peaking analysis for Oconee 1 Cycle 4 operation from 0 to 100 EFPD in the unrodded mode with an assumed 6.03% quadrant tilt throughout the range of power levels. This analysis was based on calculation using the PDQ computer code and showed a 9% increase in local peaking based on the relationship between peaking and tilt. The licensee has supplied a comparison of calculated and measured power distributions at 40% and 75% of full power. The licensee has stated that these power distributions in conjunction with the standard total and radial nuclear uncertainty factors show that the 9% increase in local peaking is conservative.

The licensee calculated the total peaks during various times of the fuel cycle through 100 EFPD for the proposed Technical Specification limits. This calculation showed that the total peaks would be reduced from the values for the current Technical Specification limits at all times from 4 EFPD to 100 EFPD. Oconee Unit 1 Cycle 4 is beyond the 4 EFPD value, so that the power peaking will be reduced for the Oconee Unit 1 proposed operation.

The licensee has pointed out that operation in the unrodded mode provides a means to restrict power peaking to nominal values. This protection is gained at the expense of operational flexibility. With this mode of operation the plant has a greatly reduced maneuvering capability. However, the usual peaking factors due to xenon changes induced by normal maneuvering were included in the analysis, providing additional conservatism.

The ejected rod worth insertion limits were determined based on using the hot, zero power measured values of rod worth to correct for the quadrant tilt effects. The resulting maximum effected rod worth correction factor was over 50%. This factor was used to adjust calculated ejected rod worths for the existence of the quadrant tilt. The net result of this procedure is the decrease in the amount that the operating banks may be inserted to satisfy the criteria during a postulated ejected rod accident. The resulting rod insertion limits were less limiting than shutdown margin criteria at all power levels above zero power. Thus, only at the zero power limit are the rod position limits based on ejected rod criteria.

The shutdown rod insertion limits were determined using standard techniques based on symmetric conditions and adjusting these calculations to account for the tilt. The calculated stuck rod worths are increased over 50%. The measured values of banks 5, 6 and 7 at Hot Zero Power were also used to determine the shutdown margin rod insertion limits. As an added conservatism the beginning of life calculated total rod worth was used at 100 EFPD to determine the limits at this time. The licensee stated that this procedure results in conservative shutdown rod insertion limits.

The licensee has concluded that the net effect of all these conservatisms is that the core is restricted in operating flexibility but allowed to operate at full power in a safe manner. The current Axial Power Shaping Rods position limits and imbalance limits for 0 to 100 EFPD are more restrictive than necessary for the proposed mode of rod-out-operations. The rod position limits were determined based on the super-position of the most conservative calculated and measured data.

The proposed unrodded operation is not a new operational mode. It has been previously submitted¹ and found acceptable.² The regulatory position in reference 2 suggests that Technical Specifications include a two-hour hold at 90% of rated power to ensure that transient xenon does not increase the linear heat rate by more than 5%, and quadrant tilt verifications at two-hour intervals. Rancho Seco Unit 1 Technical Specifications allow operation in an unrodded mode. The staff compared these to the Oconee 1 Technical Specifications. We have found that the Rancho Seco Unit 1 Technical Specifications are compatible with the Oconee 1 Technical Specifications and that the intent of the regulatory positions are satisfied by the current Oconee 1 Technical Specifications which are not changed for this amendment.

We have reviewed the licensee's current surveillance program. We consider that additional surveillance is necessary to assure that operational anomalies are observed on a timely basis. Thus, the licensee has agreed to increase surveillance of reactor power distribution to daily.

We have also agreed to remove the requirement for a report in 24 EFPD since the licensee must justify continued operation past 100 EFPD and this justification will address the flux tilt experienced during Oconee 1 Cycle 4.

Based on the licensee's submittal which shows that the rod position limits conservatively compensate for the increased potential tilt, the previous staff review of unrodded operation for Rancho Seco Unit 1, the compliance of Oconee Unit 1 to the regulatory position for unrodded cores, and the increased power distribution surveillance, we find the requested change in rod position and tilt limits to be acceptable.

We consider operation at 100% power or below acceptable with a flux tilt of 6.03%. However, we have evaluated operation for only 100 EFPDs. Operation past 100 EFPD must be supported by an amendment request by the licensee with suitable justification. We are requesting that a request to amend the license for operation past 100 EFPD be submitted no later than 80 EFPD.

Based on our evaluation, operation in the proposed manner does not reduce the safety margins of the current Technical Specification limits. We conclude that the probability or consequences of any transients and accidents considered in the FSAR are not increased and that the safety margins are not reduced. Thus, we conclude that these changes do not involve a significant hazards consideration.

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: November 23, 1977

References

- 1 "Operational Parameters for Rancho Seco, Unit 1," TRG-73-47, October 1973.
- 2 Memorandum from V. Stello to R. C. DeYoung, "Review of Babcock and Wilcox letter Report Entitled, 'Operational Parameters for Rancho Seco Unit 1,' October 1973, TRG-73-47," October 16, 1973.

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. 53, 53 and 50 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.

These amendments revise the Technical Specifications to allow operation of Oconee Unit 1 Cycle 4 at 100% full power with a flux tilt of 6.03% in an unrodded mode.


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 November 9, 1977, (2) Amendment Nos. 53, 53 and 50 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 23rd day of November 1977.

FOR THE NUCLEAR REGULATORY COMMISSION


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

PRELIMINARY DETERMINATION

NOTICING OF PROPOSED LICENSING AMENDMENT

LICENSEE: DUKE POWER COMPANY (DPC)

REQUEST FOR: Technical Specification changes related to Oconee Unit 1, Cycle 4 Reload

REQUEST DATE: March 30, 1977

PROPOSED ACTION: () Pre-notice Recommended
 (XX) Post-notice Recommended
 () Determination delayed pending completion of Safety Evaluation

BASIS FOR DECISION: 1. The licensee proposes to use the Babcock & Wilcox FLAME 3 Code in preparing Technical Specification limits. This code has not been used at Oconee before but was approved by the staff in August of 1976 for use in calculations as done for Oconee. This code was also used by Arkansas Power and Light Company for the Arkansas Nuclear Unit 1 for the same type of calculations. No pre-notice was made in that case and the reload amendment issued on March 31, 1977, concludes that the change did not involve a significant hazards consideration.

Based on these considerations, we conclude that the use of FLAME 3 at Oconee does not involve a significant increase in the probability of an accident and does not involve a significant decrease in a safety margin, and is not a significant hazards consideration.

2. Although the licensee proposes to use an ejected rod worth of 0.65% $\Delta K/k$ rather than the 0.50% $\Delta K/k$ previously used, this value of rod worth has already been used on other Oconee Class B&W plants, namely, Oconee Units 2 and 3, Arkansas and Three Mile Island. The use of a 0.65% $\Delta K/k$ maximum ejected rod worth is justified by comparing key nuclear and thermal-hydraulic parameters pertinent to the ejection accident between Oconee 2 and Oconee 1, Cycle 4. The comparisons show that the Oconee 1, Cycle 4 results are of at least equal or greater conservatism than the Oconee 2 results.

Since the 0.65% $\Delta K/k$ value has already been used for Oconee Units 2 and 3 which have essentially the same B&W reactors as Oconee Unit 1, we conclude that this change has been adequately evaluated for Oconee Unit 1 and does not involve a significant hazards consideration.

3. Other changes sought by the licensee in this amendment request involve items which have been evaluated in previous evaluations.

Proposed NEPA Action:

- () EIS Required
- () Negative Declaration (ND) and Environmental Impact Appraisal (EIA) Required
- (XX) No EIS, ND or EIA Required
- () Determination delayed pending completion of EIA

BASIS FOR DECISION: No change in effluent types or amounts and no change in power level.

CONCURRENCES:

DATE :

- | SEQUENCES | DATE: |
|-----------------|---------|
| 1. D. Neighbors | 4/14/77 |
| 2. A. Schwencer | 4/19/77 |
| 3. K. R. Goller | 4/26/77 |
| 4. OELD | 5-3-77 |