DISTRIBUTION
Docket Files (3)
NRC PDR (3)
Local PDR
ORB#1 Reading
Attorney, OELD
OI&E (3)
NDube
BJones (12)
JMMcGough
JSaltzman,OAI
SMSheppard
CMTrammell
RAPurple
SKari
BScharf (15)
TJCarter
PCollins
SVarga
CHebron
ACRS (14)
JRBuchanan
TBAbernathy
DEisenhut
xTR

JUL 1 6 1975

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

Duke Power Company
ATTN: Mr. Austin C. Thies
Senior Vice President
422 South Church Street
Post Office Box 2178
Charlotte, North Carolina 28201

Gentlemen:

The Commission has issued the enclosed Amendment No. 8, Technical Specification Change No. 18 for License No. DPR-38; Amendment No. 8, Technical Specification Change No. 13 for License No. DPR-47; and Amendment No. 5, Technical Specification Change No. 5 for License No. DPR-55, for the Oconee Nuclear Station, Units 1, 2, and 3. These amendments are in response to your request dated May 9, 1975.

These amendments (1) modify the rod withdrawal limit curves to include limitations associated with maintaining potential ejected control rod worth within previously established limits (including following control rod interchange) and limitations associated with maintaining shutdown margin, (2) delete the separate specification on maximum inserted control rod worths, but include the limits and bases therefor in (1) above, (3) incorporate an additional restriction on the regulating control rod positions prior to criticality to assure that the ejected rod worth does not exceed 1% delta k/k at hot zero power, and (4) permit the rod withdrawal limit curves associated with ejected rod limits to be exceeded for a maximum period of two hours, provided that shutdown margin requirements are maintained and corrective measures are taken immediately to achieve a rod pattern consistent with the limit curves.

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

Sincerely,

Original signed by:
Robert A. Purple
Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

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

OFFICE	RL:ORB#1	TR:CPB	OELD	RL:ORB#1
SURNAME	CTrammell:bl			RAPurple
DATE	7/ /75	7/ /75	7/ /75	7/ /75

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. 5
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 May 9, 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. 5 ."

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

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Purple

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

Attachment:
Change No. 5 to Technical Specifications

Date of Issuance:

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 8 TO FACILITY LICENSE NO. DPR-38,
CHANGE NO. 18 TO TECHNICAL SPECIFICATIONS;

AMENDMENT NO. 8 TO FACILITY LICENSE NO. DPR-47,
CHANGE NO. 13 TO TECHNICAL SPECIFICATIONS;

AMENDMENT NO. 5 TO FACILITY LICENSE NO. DPR-55,
CHANGE NO. 5 TO TECHNICAL SPECIFICATIONS;

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

Revise Appendix A as follows:

Remove Pages	Insert Pages
3.1-8	3.1-8
3.1-9	3.1-9
3.5-7	3.5-7
3.5-8	3.5-8
3.5-10	3.5-10
3.5-11	3.5-11
3.5-14	3.5-14
-	3.5-14a
3.5-15	3.5-15
3.5-16	3.5-16
-	3.5-16a
3.5-17	3.5-17
3.5-19	3.5-19
3.5-20	3.5-20

3.1.3 Minimum ıditions for Criticality

Specification

3.1.3.1 The reactor coolant temperature shall be above 525°F except for portions of low power physics testing when the requirements of Specification 3.1.9 shall apply.

3.1.3.2 Reactor coolant temperature shall be above DTT + 10°F.

3.1.3.3 When the reactor coolant temperature is below the minimum temperature specified in 3.1.3.1 above, except for portions of low power physics testing when the requirements of Specification 3.1.9 shall apply, the reactor shall be subcritical by an amount equal to or greater than the calculated reactivity insertion due to depressurization.

3.1.3.4 The reactor shall be maintained subcritical by at least 1%Δk/k until a steam bubble is formed and a water level between 80 and 396 inches is established in the pressurizer.

3.1.3.5 Except for physics tests and as limited by 3.5.2.1, safety rod groups shall be fully withdrawn prior to any other reduction in shutdown margin by deboration or regulating rod withdrawal during the approach to criticality. The regulating rods shall then be positioned within their position limits defined by Specification 3.5.2.5 prior to deboration. 8/8/5

Bases

At the beginning of the initial fuel cycle, the moderator temperature coefficient is expected to be slightly positive at operating temperatures with the operating configuration of control rods.(1) Calculations show that above 525°F, the consequences are acceptable.

Since the moderator temperature coefficient at lower temperatures will be less negative or more positive than at operating temperature,(2) startup and operation of the reactor when reactor coolant temperature is less than 525°F is prohibited except where necessary for low power physics tests.

The potential reactivity insertion due to the moderator pressure coefficient(2) that could result from depressurizing the coolant from 2100 psia to saturation pressure of 900 psia is approximately 0.1%Δk/k.

During physics tests, special operating precautions will be taken. In addition, the strong negative Doppler coefficient(1) and the small integrated Δk/k would limit the magnitude of a power excursion resulting from a reduction of moderator density.

The requirement that the reactor is not to be made critical below DTT + 10°F provides increased assurances that the proper relationship between primary coolant pressure and temperatures will be maintained relative to the NDTT of the primary coolant system. Heatup to this temperature will be accomplished by operating the reactor coolant pumps.

If the shutdown margin required by Specification 3.5.2 is maintained, there is no possibility of an accidental criticality as a result of a decrease of coolant pressure.

The requirement for pressurizer bubble formation and specified water level when the reactor is less than 1% subcritical will assure that the reactor coolant system cannot become solid in the event of a rod withdrawal accident of a start-up accident.[3]

The requirement that the safety rod groups be fully withdrawn before criticality ensures shutdown capability during startup. This does not prohibit rod latch confirmation, i.e., withdrawal by group to a maximum of 3 inches withdrawn of all seven groups prior to safety rod withdrawal. 8/8/5

The requirement for regulating rods being within their rod position limits ensures that the shutdown margin and ejected rod criteria at hot zero power are not violated.

REFERENCES

(1) FSAR, Section 3

(2) FSAR, Section 3.2.2.1.4

(3) FSAR, Supplement 3, Answer 14.4.1

JUL 16 1975

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. 8/8/5

3.5.2.4 Quadrant Power Tilt

a. Whenever the quadrant power tilt exceeds 4 percent, except for physics tests, the quadrant tilt shall be reduced to less than 4 percent within two hours or the following actions shall be taken:

(1) If four reactor coolant pumps are in operation, the allowable thermal power shall be reduced by 2 percent of full power for each 1 percent tilt in excess of 4 percent below the power level cutoff (see Figures 3.5.2-1A1, 3.5.2-1B1, 3.5.2-1B2, 3.5.2-1B3, 3.5.2-1C1, 3.5.2-1C2, and 3.5.2-1C3).

(2) If less than four reactor coolant pumps are in operation, the allowable thermal power shall be reduced by 2 percent of full power for each 1 percent tilt below the power allowable for the reactor coolant pump combination as defined by Specification 2.3.

(3) Except as provided in 3.5.2.4.b, the reactor shall be brought to the hot shutdown condition within four hours if the quadrant tilt is not reduced to less than 4 percent after 24 hours.

b. If the quadrant tilt exceeds 4 percent and there is simultaneous indication of a misaligned control rod per Specification 3.5.2.2, reactor operation may continue provided power is reduced to 60 percent of the thermal power allowable for the reactor coolant pump combination.

c. Except for physics tests, if quadrant tilt exceeds 9 percent, 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. 8/8/5

b. Operating rod group overlap shall be 25% ± 5% between two sequential groups, except for physics tests.

c. Except for physics tests or exercising control rods, the control rod 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), and 3.5.2-1C1, 3.5.2-1C2, and 3.5.2-1C3 (Unit 3) for four pump operation and on Figures 3.5.2-2A (Unit 1), 3.5.2-2B (Unit 2), and 3.5.2-2C (Unit 3) for three or two pump operation. If the control rod position limits are exceeded, corrective measures shall be taken immediately to achieve an acceptable control rod position. Acceptable control rod positions shall then be attained within two hours.

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) [see additional operating restrictions for 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 shall be asymptotically approaching the value for operation at steady-state rated power.

JUL 1 6 1975

Bases

The power-imbalance envelope defined in Figures 3.5.2-3A, 3.5.2-3B, and 3.5.2-3C is based on LOCA analyses which have defined the maximum linear heat rate (see Figure 3.5.2-4) such that the maximum clad temperature will not exceed the Final Acceptance Criteria. Corrective measures will be taken immediately should the indicated quadrant tilt, rod position, or imbalance be outside their specified boundary. Operation in a situation that would cause the Final acceptance criteria to be approached should a LOCA occur is highly improbable because all of the power distribution parameters (quadrant tilt, rod position, and imbalance) must be at their limits while simultaneously all other engineering and uncertainty factors are also at their limits.** Conservatism is introduced by application of:

a. Nuclear uncertainty factors
b. Thermal calibration
c. Fuel densification effects
d. Hot rod manufacturing tolerance factors

The 25% ± 5% overlap between successive control rod groups is allowed since the worth of a rod is lower at the upper and lower part of the stroke. Control rods are arranged in groups or banks defined as follows:

Group	Function
1	Safety
2	Safety
3	Safety
4	Safety
5	Regulating
6	Regulating
7	Xenon transient override
8	APSR (axial power shaping bank)

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. Therefore, compliance with the ECCS power peaking criterion is ensured by the rod position limits. The minimum available rod worth, consistant with the rod position limits, provides for achieving hot shutdown by reactor trip at any time, assuming the highest worth control rod that is withdrawn remains in the full out position (1). The rod position limits also ensure that inserted rod groups will not contain single rod worths greater than 0.5% $\Delta k/k$ (unit 1) or 0.65% $\Delta k/k$ (units 2 and 3) at rated power. These values have been shown to be safe by the safety analysis (2,3,4) of the hypothetical rod ejection accident. A maximum single inserted control rod worth of 1.0% $\Delta k/k$ is allowed by the rod positions limits at hot zero power. A single inserted control rod worth of 1.0% $\Delta k/k$ at beginning-of-life, hot zero power would result in a lower transient peak thermal power and, therefore, less severe environmental consequences than a 0.5% $\Delta k/k$ (unit 1) or 0.65% $\Delta k/k$ (units 2 and 3) ejected rod worth at rated power. 8/8/5

Control rod groups are withdrawn in sequence beginning with Group 1. Groups 5,6, and 7 are overlapped 25 percent. The normal position at power is for Groups 6 and 7 to be partially inserted.

**Actual operating limits depend on whether or not incore or excore detectors are used and their respective instrument and calibration errors. The method used to define the operating limits is defined in plant operating procedures.

JUL 1 6 1975

The quadrant power tilt limits set forth in Specification 3.5.2.4 have been established within the thermal analysis design base using the definition of quadrant power tilt given in Technical Specifications, Section 1.6. These limits in conjunction with the control rod position limits in Specification 3.5.2.5c ensure that design peak heat rate criteria are not exceeded during normal operation when including the effects of potential fuel densification.

The quadrant tilt and axial imbalance monitoring in Specifications 3.5.2.4 and 3.5.2.6, respectively, normally will be performed in the process computer. The two-hour frequency for monitoring these quantities will provide adequate surveillance when the computer is out of service.

Allowance is provided for withdrawal limits and reactor power imbalance limits to be exceeded for a period of two hours without specification violation. Acceptance rod positions and imbalance must be achieved within the two-hour time period or appropriate action such as a reduction of power taken.

Operating restrictions are included in Technical Specification 3.5.2.5d to prevent excessive power peaking by transient xenon. The xenon reactivity must be beyond the "undershoot" region and asymptotically approaching its equilibrium value at rated power.

REFERENCES

[1]FSAR Section 3.2.2.1.2

[2]FSAR Section 14.2.2.2

[3]FSAR SUPPLEMENT 9

[4]B&W FUEL DENSIFICATION REPORT

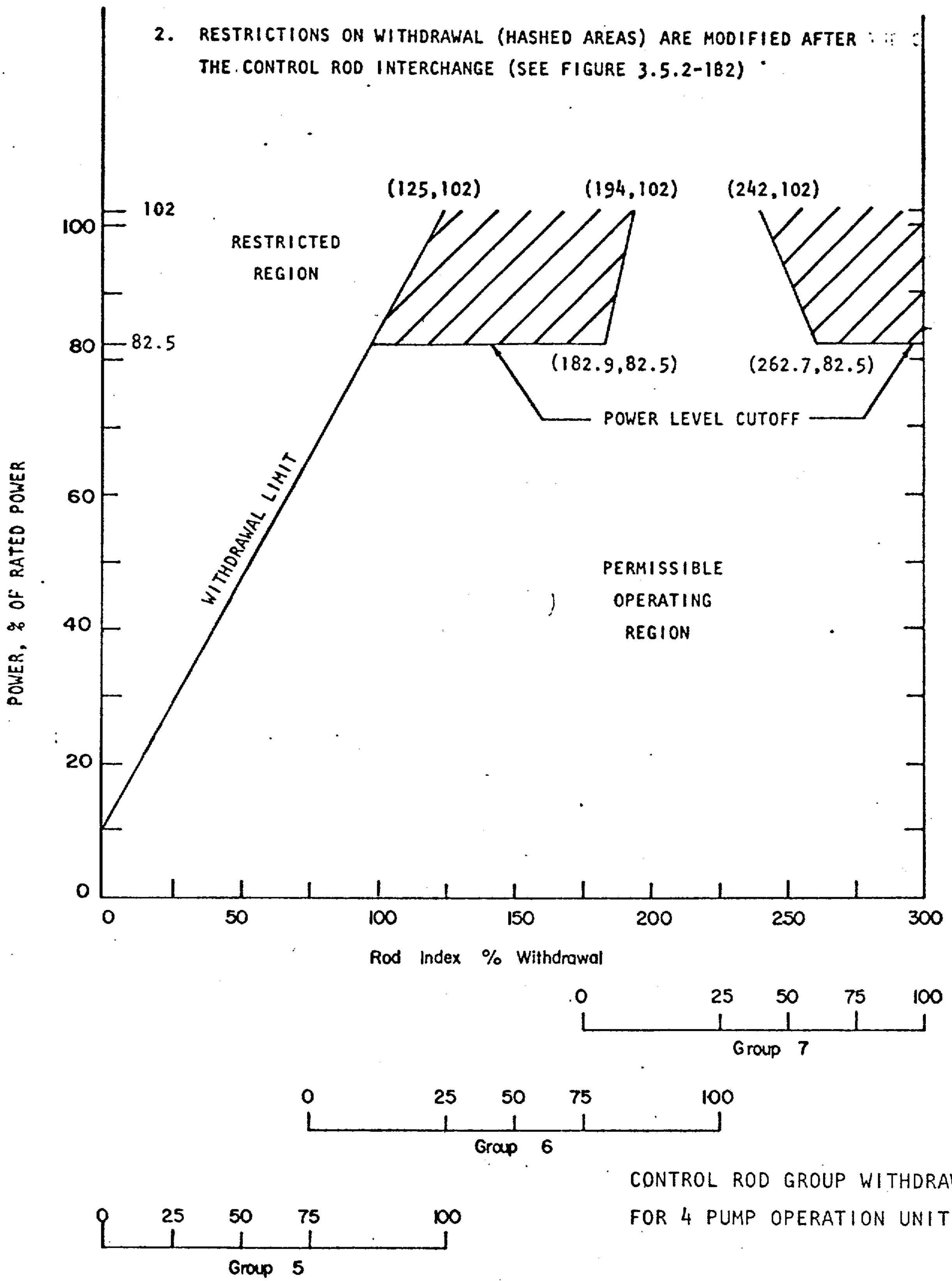
BAW-1409 (UNIT 1)

BAW-1396 (UNIT 2) 8/8/5

BAW-1400 (UNIT 3)

1. ROD INDEX IS THE PERCENTAGE SUM OF THE WITHDRAWAL OF THE

2. RESTRICTIONS ON WITHDRAWAL (HASHED AREAS) ARE MODIFIED AFTER
THE CONTROL ROD INTERCHANGE (SEE FIGURE 3.5.2-1B2)

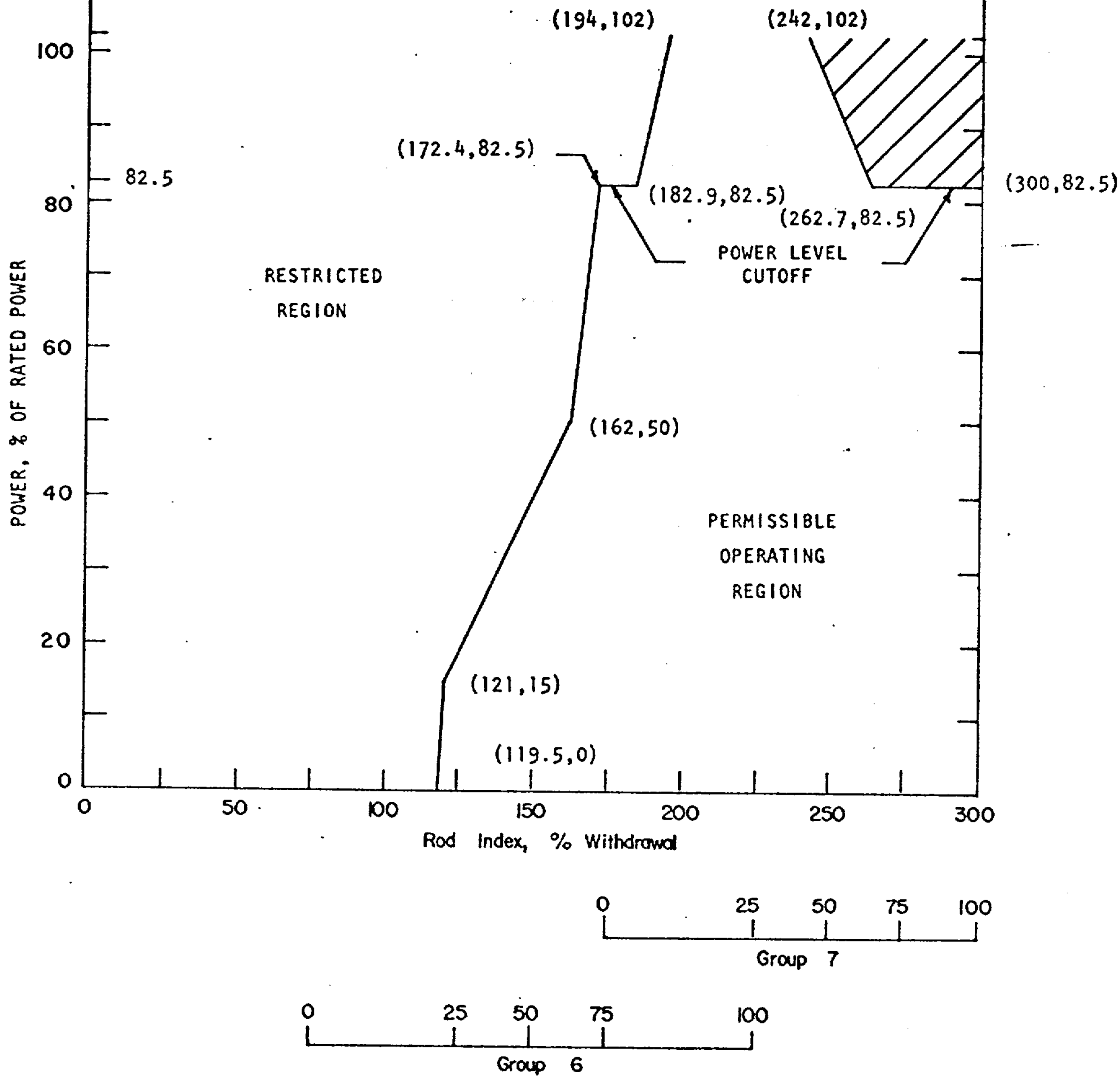


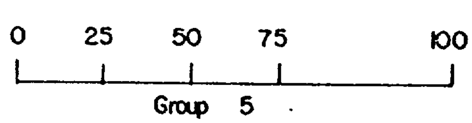
CONTROL ROD GROUP WITHDRAWAL LIMITS
FOR 4 PUMP OPERATION UNIT 2

UNIT 2
OCONEE NUCLEAR STATION
Figure 3.5.2-1B1

JUL 16 1975

1. ROD INDEX IS THE PERCENTAGE SUM OF THE WITHDRAWAL OF THE OPERATING GROUPS.
2. THE ADDITIONAL RESTRICTIONS ON WITHDRAWAL (HASHED AREAS) ARE IN EFFECT AFTER THE CONTROL ROD INTERCHANGE. THE RESTRICTIONS ON WITHDRAWAL ARE FURTHER MODIFIED AFTER 435 FULL POWER DAYS OF OPERATION (SEE FIGURE 3.5.2-1B3)

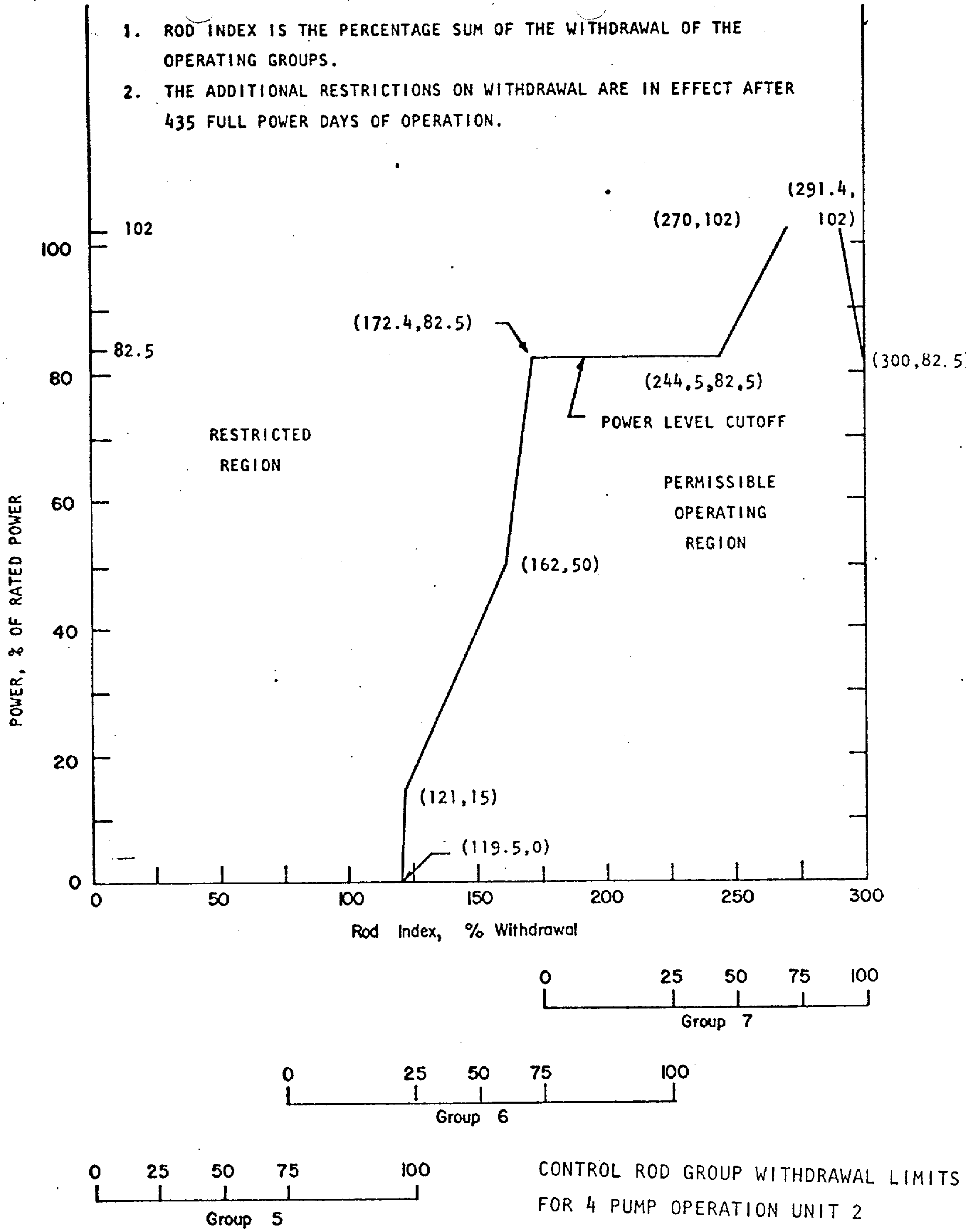




CONTROL ROD GROUP WITHDRAWAL LIMITS FOR 4 PUMP OPERATION UNIT 2

UNIT 2
OCONEE NUCLEAR STATION
Figure 3.5.2-1B2

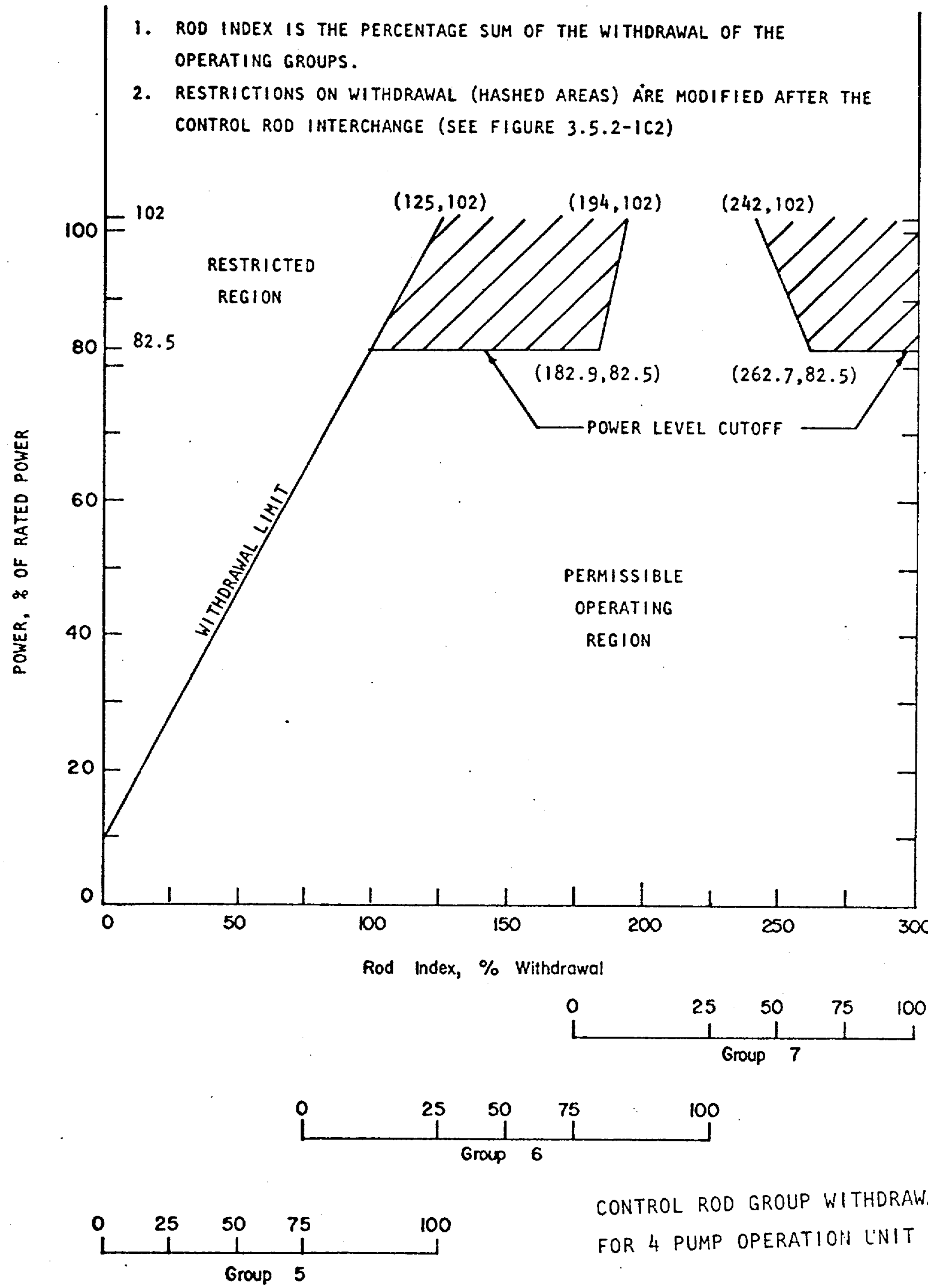
JUL 1 6 1975



CONTROL ROD GROUP WITHDRAWAL LIMITS
FOR 4 PUMP OPERATION UNIT 2

UNIT 2
OCONEE NUCLEAR STATION
Figure 3.5.2-1B3

JUL 1 6 1975

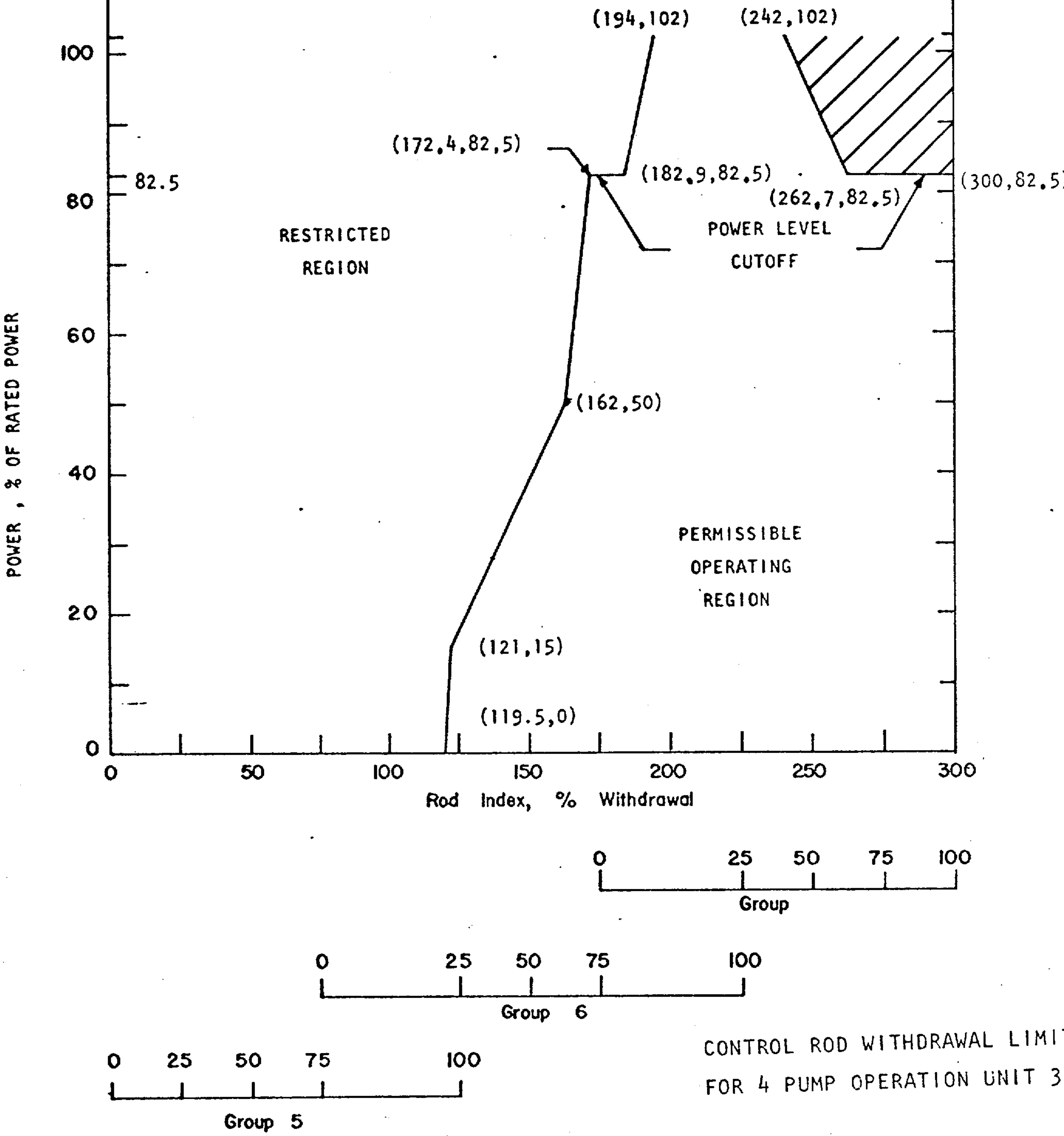


CONTROL ROD GROUP WITHDRAWAL LIMITS FOR 4 PUMP OPERATION UNIT 3

UNIT 3
OCONEE NUCLEAR STATION
Figure 3.5.2-1C1

JUL 1 6 1975

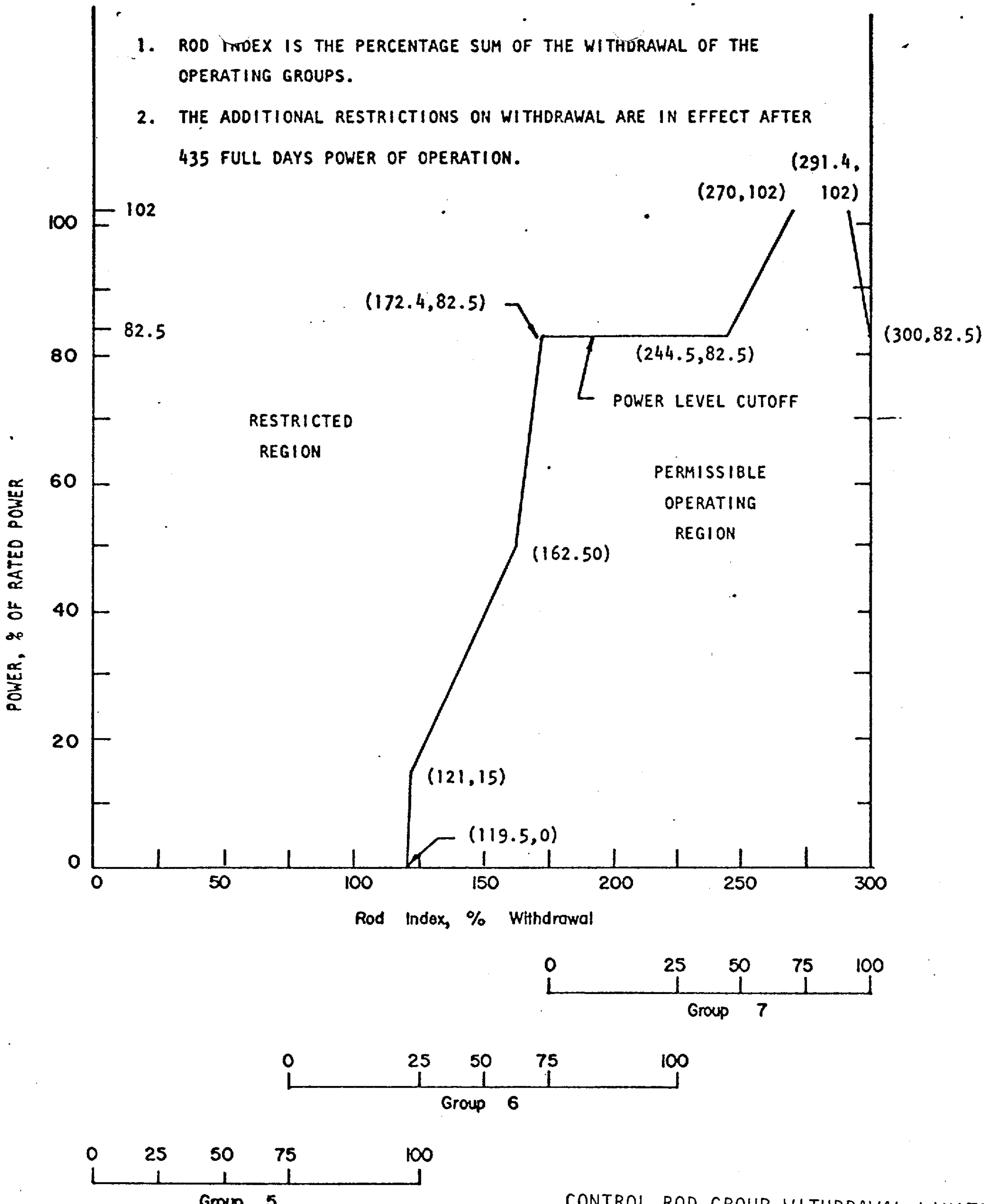
1. ROD INDEX IS THE PERCENTAGE SUM OF THE WITHDRAWAL OF THE OPERATING GROUPS.
2. THE ADDITIONAL RESTRICTIONS ON WITHDRAWAL (HASHED AREAS) ARE IN EFFECT AFTER THE CONTROL ROD INTERCHANGE. THE RESTRICTIONS ON WITHDRAWAL ARE FURTHER MODIFIED AFTER 435 FULL POWER DAYS OF OPERATION (SEE FIGURE 3.5.2-1C3)



CONTROL ROD WITHDRAWAL LIMITS FOR 4 PUMP OPERATION UNIT 3

UNIT 3
OCONEE NUCLEAR STATION
Figure 3.5.2-1C2

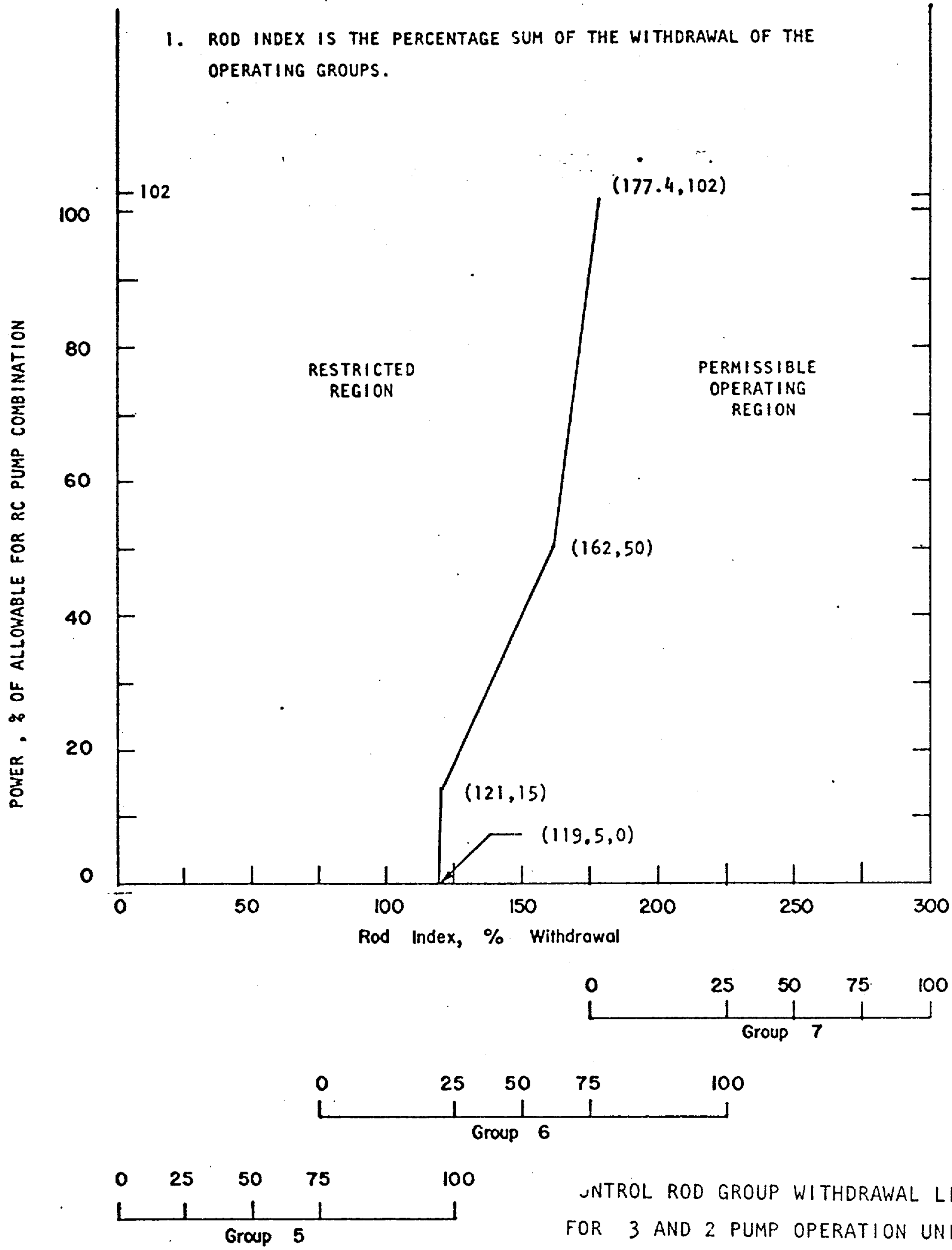
JUL 16 1975



CONTROL ROD GROUP WITHDRAWAL LIMITS FOR 4 PUMP OPERATION UNIT 3

UNIT 3
OCONEE NUCLEAR STATION
Figure 3.5.2-1C3

JUL 1 6 1975



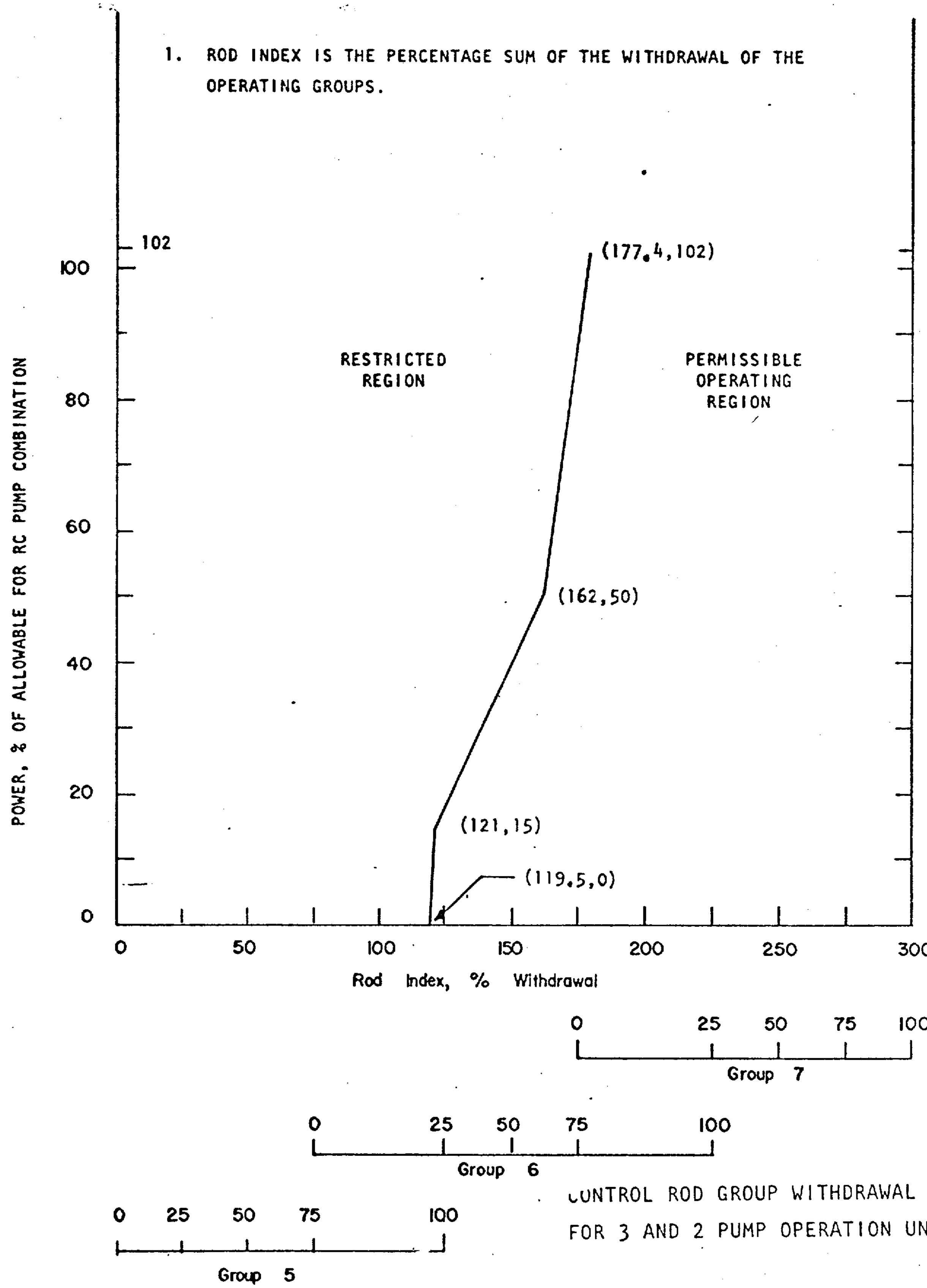
ᴊNTROL ROD GROUP WITHDRAWAL LIMITS FOR 3 AND 2 PUMP OPERATION UNIT 2

UNIT 2

OCONEE NUCLEAR STATION

Figure 3.5.2-2B

JUL 16 1975



CONTROL ROD GROUP WITHDRAWAL LIMITS FOR 3 AND 2 PUMP OPERATION UNIT 3

UNIT 3
OCONEE NUCLEAR STATION
Figure 3.5.2-2C

JUL 16 1975

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 8 TO FACILITY LICENSE NO. DPR-38
CHANGE NO. 18 TO TECHNICAL SPECIFICATIONS;

SUPPORTING AMENDMENT NO. 8 TO FACILITY LICENSE NO. DPR-47
CHANGE NO. 13 TO TECHNICAL SPECIFICATIONS;

SUPPORTING AMENDMENT NO. 5 TO FACILITY LICENSE NO. DPR-55
CHANGE NO. 5 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 March 31, 1975, the Nuclear Regulatory Commission informed Duke Power Company (the licensee) that deficiencies had been identified in the ejected rod calculations on which the control rod limits for the Oconee Nuclear Station units were based. This letter stated that, following control rod interchange*, potential ejected control rod worths greater than 1% delta k/k could result with the plant in the hot zero power condition, which would exceed the limit specified in Tech. Spec. 3.5.2.3. The licensee was therefore requested to submit either the results of analysis to show that the existing rod withdrawal limits were adequate to assure that ejected rod worths were less than the allowable limits after rod interchange, or submit revised rod position limits in the form of proposed Tech. Specs. to maintain ejected rod worths below these limits.

In response to this request, by letter dated May 9, 1975, the licensee submitted the results of their evaluation, together with proposed changes to the Technical Specifications for the Oconee Nuclear Station.

Discussion

The proposed change would (1) incorporate an additional restriction on the regulating control rod positions prior to criticality, (2) delete the

---
* Control rod interchange is a process in which control rods are resequenced for operation during the latter part of the fuel cycle.

separate specification on inserted control rod worth and include these requirements in a set of rod withdrawal limit curves, and (3) modify the rod withdrawal limits for Oconee Units 2 and 3 after control rod interchange to assure that the hot zero power ejected rod worths following interchange do not exceed 1% $\Delta k/k$.

The additional restriction on regulating rod withdrawal would require that these rods be positioned within the limits defined by the rod withdrawal limit curves prior to deboration to assure that the shutdown margin and ejected rod worth limits at hot zero power are maintained.

Historically, for Babcock and Wilcox reactors, the rod insertion limits have been derived on the basis of LOCA-limited power peaking considerations. Shutdown margin and ejected rod worth criteria have been addressed in separate specifications which must be met in addition to the rod withdrawal limit specification. In order to provide for a more direct application of the Tech. Specs., revised rod withdrawal limits have been proposed which will assure, by use of the rod withdrawal limits alone, compliance with the three subject criteria (LOCA-limited power peaking, shutdown margin, and ejected rod worth).

Evaluation

We have reviewed the proposed changes to the Oconee Nuclear Station Tech. Specs. For Oconee Units 2 and 3, revised rod withdrawal limits have been proposed since the hot zero power ejected rod worths after control rod interchange are predicted to exceed 1% delta k/k (the present limit) for certain control rod positions allowed by the present Tech. Spec. 3.5.2.5. The revised rod withdrawal limits for Units 2 and 3 have been established such that potential ejected rod worths, including an allowance for calculational uncertainties, will be less than 1% delta k/k at zero power and less than 0.65% delta k/k at full power. These reactivity values are those previously used in the analysis of a postulated rod ejection accident, including fuel densification effects, and found to have acceptable consequences(1). The revised rod withdrawal limits for Units 2 and 3 will maintain potential ejected rod worths below these limiting values, and are therefore acceptable.

For Unit 1, the licensee has determined, and we concur, that no changes to the rod withdrawal limits are required, since the ejected rod worth is predicted to be less than 1% delta k/k at hot zero power and 0.5% delta k/k at hot full power (maximum allowable ejected rod worths are slightly different for Unit 1).

(1) Supplement No. 3 to the Safety Evaluation, January 29, 1974.

The licensee's proposal involves operating limits in a different form than presently existing (i.e., a revised insertion limit curve), but does not involve changes to the bases on which safety margins are based or to safety margins themselves. The new curves and limitations will maintain ejected rod worths below the established maximums after control rod interchange, and in addition factor in other current limitations governing shutdown margin and LOCA limited power peaking restrictions.

In incorporating the limits on LOCA power peaking, shutdown margin, and ejected rod worth into one new curve, the proposed change would permit rod position limits to be exceeded for a period of up to two hours. This is identical to the existing specification which governs LOCA power peaking limits and was previously found acceptable on the basis of the exceedingly low probability of the occurrence of a LOCA in this limited time interval and the fact that a deliberate, controlled return to the normal insertion limits provides less occasion for further operating error or system malfunction than would alternate responses (e.g., immediate shutdown and startup). The proposed change would make a similar 2-hour allowance for ejected rod worth limits. Normal load demand changes on the electrical system result in control rod motion which is necessary to regulate reactor output in response to the load changes. This is done either automatically by the rod drive control system or manually by the operator. Following load changes, the reactor coolant boron concentration is adjusted, if necessary, in order to allow control rods to be placed in the desired position. For slower load changes, boron concentration can be adjusted coincident with the load change, and thus control rod position can be maintained where desired. For more rapid load changes in which boron concentration cannot be changed quickly enough, control rod motion is necessary. This could result in temporarily crossing the rod withdrawal limit due to normal control action, and can be subsequently corrected by dilution or boration of the reactor coolant to restore proper rod position. Crossing of the limit line is thus not intentional, but results from normal and necessary control action to avoid other operating limits. If this should occur, the licensee is required by Tech Specs. to undertake corrective action immediately, and achieve compliance with the limit curve within two hours. The two hour period is sufficient to allow a careful, controlled return to the normal limits, and the amount of deviation is limited by the requirement that the shutdown margin be continuously maintained.

In consideration of the above, and the fact that the very low probability of a rod ejection accident occurring in this limited time is similar to that of a LOCA (for which the 2-hour allowance was previously approved), we find that the proposed maximum 2-hour exception to the rod withdrawal limit requirement to be acceptable.

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

Date: July 16, 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. 8, 8, and 5 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) modify the rod withdrawal limit curves to include limitations associated with maintaining potential ejected control rod worth within previously established limits (including following control rod interchange) and limitations associated with maintaining shutdown margin, (2) delete the separate specification on maximum inserted control rod worths, but include the limits and bases therefor in (1) above, (3) incorporate an additional restriction on the regulating control rod positions prior to criticality to assure that the ejected rod worth does not exceed 1% delta k/k at hot zero power, and (4) permit the rod limits to be exceeded for a maximum period of two hours, provided that shutdown margin requirements are maintained and corrective measures are taken immediately to achieve a rod pattern consistent with the limit curves.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and

OFFICE ➤						
SURNAME ➤						
DATE ➤						

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 May 9, 1975, (2) Amendments No. 8 , 8 , and 5 to Licenses No. DPR-38, DPR-48, and DPR-55, with Changes No. 18 , 13 , and 5 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 16th day of July 1975.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:
Robert A. Purple

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

OFFICE ➤						
SURNAME ➤						
DATE ➤						