

DISTRIBUTION

Docket File

- NRC PDR
- Local PDR
- NSOC
- TERA
- ORB Reading
- NRR Reading
- D. Eisenhut
- R. Purple
- T. Novak
- R. Tedesco
- G. Lainas
- J. Olshinski
- C. Parrish
- D. Neighbors
- OELD
- OI&E(5)

- B. Jones (4)
- B. Scharf (10)
- ACRS (16)
- OPA
- R. Diggs
- H. Denton
- J. Heltemes
- P. Wagner
- ORB #3 Secretary

AUGUST 29 1980

Docket No. 50-261

Mr. J. A. Jones  
 Senior Vice President  
 Carolina Power and Light Company  
 336 Fayetteville Street  
 Raleigh, North Carolina 27602

Dear Mr. Jones:

The Commission has issued the enclosed Amendment No. ~~48~~ to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2. The amendment consists of changes to the Technical Specifications and is in response to your request dated August 1, 1980.

The amendment consists of revision to the Technical Specifications which change the control rod position indication system misalignment limits. These changes were requested by the NRC on October 29, 1979.

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

Sincerely,

Original Signed by  
JDNeighbors for

Steven A. Varga, Chief  
 Operating Reactors Branch #1  
 Division of Licensing

Enclosures:

1. Amendment No. 48 to DPR-23
2. Safety Evaluation
3. Notice of Issuance

cc: W. enclosures  
 See next page

8009180107 P

\* See previous yellow

# 14	OFFICE	* DL:ORB1	* DL:ORB1	* DL:ORB1	DL:AD:OR	OELD	ORB3
	SURNAME	JDNeighbors;c	CParrish	SAVarga	TMNovak	Almstead	PWagner
	DATE	08/ /80	08/ /80	08/24/80	08/ /80	08/26/80	08/22/80

*Answers to form  
 amend notice,  
 see corrections on  
 beyond and p. 2  
 of notice*

Docket No. 50-261

Mr. J. A. Jones  
Senior Vice President  
Carolina Power and Light Company  
336 Fayetteville Street  
Raleigh, North Carolina 27602

Dear Mr. Jones:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2. The amendment consists of changes to the Technical Specifications and is in response to your request dated August 1, 1980.

The amendment consists of revision to the Technical Specifications which change to control rod position indication system misalignment limits. These changes were requested by the NRC on October 29, 1979.

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

Sincerely,

Steven A. Varga, Chief  
Operating Reactors Branch #1  
Division of Licensing

Enclosures:

- 1. Amendment No. to DPR-23
- 2. Safety Evaluation
- 3. Notice of Issuance

cc: W/enclosures  
See next page

DISTRIBUTION

Docket File	B. Jones (4)
NRC PDR	B. Scharf (10)
Local PDR	ACRS (16)
NSIC	OPA
TERA	R. Diggs
ORB Reading	H. Denton
NRR Reading	J. Heltemes
D. Eisenhut	P. Wagner
R. Purple	ORB #3 Secretary
T. Novak	
R. Tedesco	
G. Lainas	
J. Olshinski	
C. Parrish	
D. Neighbors	
OELD	
OI&E (5)	

OFFICE	DL:ORB#1	DL:ORB#1	DL:ORB#1	DL:AD:OR	OELD	ORB #3
SURNAME	JDNeighbors	cf CParrish	SAVarga	TMNovak		PWagner
DATE	08/15/80	08/21/80	08/21/80	08/21/80	08/ /80	8/ /80



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

August 29, 1980

Docket No. 50-261

Mr. J. A. Jones  
Senior Vice President  
Carolina Power and Light Company  
336 Fayetteville Street  
Raleigh, North Carolina 27602

Dear Mr. Jones:

The Commission has issued the enclosed Amendment No. 48 to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2. The amendment consists of changes to the Technical Specifications and is in response to your request dated August 1, 1980.

The amendment consists of revision to the Technical Specifications which change the control rod position indication system misalignment limits. These changes were requested by the NRC on October 29, 1979.

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

Sincerely,

*Joseph D. Neighles*  
for Steven A. Varga, Chief  
Operating Reactors Branch #1  
Division of Licensing

Enclosures:

1. Amendment No. 48 to DPR-23
2. Safety Evaluation
3. Notice of Issuance

cc: W. enclosures  
See next page

Mr. J. A. Jones  
Carolina Power and Light Company.

- 2 -

August 29, 1980

cc: G. F. Trowbridge, Esquire  
Shaw, Pittman, Potts and Trowbridge  
1800 M Street, N.W.  
Washington, D. C. 20036

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

Hartsville Memorial Library  
Home and Fifth Avenues  
Hartsville, South Carolina 29550

Mr. McCuen Morrell, Chairman  
Darlington County Board of Supervisors  
County Courthouse  
Darlington, South Carolina 29535

State Clearinghouse  
Division of Policy Development  
116 West Jones Street  
Raleigh, North Carolina 27603

Attorney General  
Department of Justice  
Justice Building  
Raleigh, North Carolina 27602

Michael C. Farrar, Chairman  
Atomic Safety and Licensing  
Appeal Board Panel  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Richard S. Salzman  
Atomic Safety and Licensing  
Appeal Board Panel  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dr. W. Reed Johnson  
Atomic Safety and Licensing  
Appeal Board Panel  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Director, Technical Assessment Division  
Office of Radiation Programs (AW-459)  
U. S. Environmental Protection Agency  
Crystal Mall #2  
Arlington, Virginia 20460



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

CAROLINA POWER AND LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 48  
License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Carolina Power and Light Company (the licensee) dated August 1, 1980 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 Operating License No. DPR-23 is hereby amended to read as follows:

(2) 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 as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*for Joseph D. Neighboer*  
Steven A. Varga, Chief  
Operating Reactors Branch #1  
Division of Licensing

Attachment:  
Changes to the  
Technical Specifications

Date of Issuance: August 29, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 48

FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

Replace the following page of the Appendix A Technical Specification with the enclosed page. The revised page is identified by Amendment Number and contains a vertical line indicating the area of change.

Remove

3.10-2

3.10-11

Insert

3.10-2

3.10-2A

3.10-11

3.10-11A

3.10.1.5 Except for physics tests, if a full length control rod is withdrawn as follows:

- at positions  $\geq 200$  steps and is  $> 15$  inches out of alignment with its bank position, or
- at positions  $< 200$  steps and is  $> 7.5$  inches out of alignment with the average of its bank's position

then within two hours perform the following:

- a. Correct the situation, or
- b. Determine by measurement the hot channel factors and apply Specification 3.10.2.1, or
- c. Limit power to 70 percent of rated power for three-loop operation.

3.10.1.6 Insertion limits do not apply during physics tests or during periodic exercise of individual rods. However, the shutdown margin indicated in Figure 3.10-2 must be maintained except for the low power physics test to measure control rod worth and shutdown margin. For this test the reactor may be critical with all but one full length control rod inserted.

### 3.10.2 Power Distribution Limits

3.10.2.1 At all times except during low power physics tests, the hot channel factors defined in the basis must meet the following limits:

$$F_Q(Z) \leq (2.20/P) \times K(Z) \text{ for } P > .5$$

$$F_Q(Z) < (4.40) \times K(Z) \text{ for } P \leq .5$$

$$F_{\Delta H}^N < 1.55 (1 + 0.2(1-P))$$

where  $P$  is the fraction of licensed power at which the core is operating,  $K(Z)$  is based on the function given in Figure 3.10-3, and  $Z$  is the core height location of  $F_Q$ .

shutdown margin. The specified control rod insertion limits meet the design basis criteria on (1) potential ejected control rod worth and peaking factor,<sup>(4)</sup> (2) radial power peaking factors,  $P_{\Delta H}$ , and (3) required margin shutdown.

The various control rod banks (shutdown banks, control banks) are each to be moved as a bank; that is, with all rods in the bank within one step (5/8 inch) of the bank position. Position indication is provided by two methods: a digital count of actuation pulses which shows the demand position of the banks, and a linear position indicator (LVDT) which indicates the actual rod position.<sup>(2)</sup> At rod positions  $\geq 200$  steps, full power reactivity worths of the control rods are sufficiently small such that a 15-inch indicated misalignment from the rod bank has no significant effect on the incore power distribution and is therefore allowable. For rod positions  $< 200$  steps, maintaining indicated rod position within 7.5 inches of the average of the indicated bank position provides an enforceable limit which assures design distribution is not exceeded. In the event that an LVDT is not in service, the effects of a malpositioned control rod are observable on nuclear and process information displayed in the control room and by core thermocouples and in-core movable detectors. The determination of the hot channel factors will be performed by means of the movable in-core detectors.

The two hours in 3.10.1.5 are acceptable because complete rod misalignment (control rod 12 feet out of alignment with its bank) does not result in exceeding core safety limits in steady state operation at rated power and is short with respect to probability of an independent accident. If the condition cannot be readily corrected, the specified reduction in power will ensure that design margins to core limits will be maintained under both steady state and anticipated transient conditions.

The intent of the test to measure control rod worth and shutdown margin (Specification 3.10.1.6) is to measure the worth of all rods less the worth of the worst case for an assumed stuck rod; that is, the most reactive rod. The measurement would be anticipated as part of the initial startup program and infrequently over the life of the plant, to be associated primarily with determinations of special interest such as end of life cooldown, or startup of fuel cycles which deviate from normal



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 48 TO FACILITY

OPERATING LICENSE NO. DPR-23

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-261

Introduction

By letter dated August 1, 1980, Carolina Power and Light Company (the licensee) requested an amendment to license No. DPR-23 for H. B. Robinson Steam Electric Plant, Unit No. 2, which would change the control rod position indication (RPI) systems misalignment limits in the Technical Specifications. These changes were in response to NRC request dated October 29, 1979.

Background

The staff recently completed a review of the LER's and Technical Specification requirements related to the Control Rod Position Indication Systems (RPI) at Westinghouse PWRs and determined that a wide variation exists in the number of LER's received and the Technical Specification requirements.

Discussion and Evaluation

Westinghouse has performed safety analyses for control rod misalignment up to 15 inches or 24 steps (one step equals 5/8 inch). Since analysis of misalignments in excess of this amount have not been submitted, we have imposed an LCO restricting continued operation with a misalignment in excess of 15 inches. Because the analog control rod position indication system has an uncertainty of 7.5 inches (12 steps), when an indicated deviation of 12 steps exists, the actual misalignment may be 15 inches. This is because one of the coils, spaced at 3.75 inches, may be failed without the operator's knowledge. The Standard Technical Specifications were written to eliminate any confusion about this, and restrict deviations to 12 indicated steps. Surveillance requirements, on the indication accuracy of 12 steps, were also prepared to ensure that the 15 inch LCO is met. Since there is no difference intended in requirements issued for any Westinghouse reactor, plants with Technical Specifications written in different terms of misalignment should consider the 12 step instrument inaccuracy when monitoring rod position.

A related problem is that the installed analog control rod position indicating system equipment may not, in some areas, be adequate to maintain the control rod misalignment specification requirement because of drift problems in the calibration curves. This is evidenced by numerous LER's concerning rod position indication accuracy. In these cases, the uncertainty may be more than 12 steps.

The licensee was requested by letter dated October 29, 1979 to review the Robinson Technical Specifications to ensure that the control rods are required to be maintained with  $\pm 12$  steps indicated position and that the rod position indication system is accurate to within  $\pm 12$  steps.

Based on our review of the licensee's submittal, we find that the proposed changes are acceptable.

#### Environmental Considerations

We have determined that the amendment does 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 the amendment involves 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 or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### Conclusion

We have concluded, based on the consideration discussed above, that: (1) because the amendment 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 amendment 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: August 29, 1980

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-261CAROLINA POWER AND LIGHT COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITYOPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 48 to Facility Operating License No. DPR-23, issued to Carolina Power and Light Company, which revised Technical Specifications for operation of the H. B. Robinson Unit No. 2 (the facility) located in Darlington County, South Carolina. The amendment is effective as of its date of issuance.

The amendment consists of revision to the Technical Specifications which change the control rod position indication system misalignment limits. These changes were requested by the NRC on October 29, 1979.

The application for the amendment 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. The findings are set forth in the license amendment. A public hearing of this amendment was not required since the amendment does not involve any significant health consideration.

8009180/22

The Commission has determined that the issuance of this amendment 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 this amendment.

For further details with respect to this action, see (1) the application for amendment dated August 1, 1980, (2) Amendment No. 48 to License No. DPR-23, 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, N.W., Washington, D.C. and at the Hartsville Memorial Library, Home and Fifth Avenues, Hartsville, South Carolina 29550. 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 Licensing.

Dated at Bethesda, Maryland, this 29th day of August, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

*Joseph D. Neighbors*  
Joseph D. Neighbors, Acting Chief  
Operating Reactors Branch #1  
Division of Licensing