Docket No. 50-298

Mr. Guy R. Horn Nuclear Power Group Manager Nebraska Public Power District Post Office Box 499 Columbus, Nebraska 68602-0499

Dear Mr. Horn:

SUBJECT: COOPER NUCLEAR STATION - AMENDMENT NO. 159 TO FACILITY OPERATING LICENSE NO. DPR-46 (TAC NO. M85323)

The Commission has issued the enclosed Amendment No. 159 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The amendment consists of revisions to the Technical Specifications (TS) in response to your application dated January 5, 1993.

The revisions modify the TS to delete the Limiting Conditions for Operation and Surveillance Requirements for Residual Heat Removal (RHR) and Core Spray (CS) low voltage auxiliary relays 27X3 1A/1B. Deletion of these relays from the TS reflects a design change which removes the relays from the plant, which will be implemented during the spring 1993 refueling outage.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly <u>Federal Register</u> notice.

Sincerely,

**/**S/

Harry Rood, Senior Project Manager Project Directorate IV-1 Division of Reactor Projects III/IV/V Office of Nuclear Reactor Regulation

**Enclosures:** 

1. Amendment No. 159 to License No. DPR-46

2. Safety Evaluation

cc w/enclosures: See next page

DISTRIBUTION:

Docket File M. Virgilio ACRS(10)(MSP315) Wanda Jones(MS7103) RIVOPA(MS2G5) NRC/Local PDR G. Hubbard

OGC (MS15B18) C. Grimes (MS11E22) OC/LFMB (MS4503) PD4-1 Reading P. Noonan

D. Hagan(MS3206) PD4-1 Plant File

J. Gagliardo, RIV

H. Rood(2)J. RoeG. Hill(4)

E. Collins, R. Kopriva,RIV

				<i>\</i>	
OFC	LA:PD4-1	PM: PD4-1	BC:EEtBy3	OGCN/3000	D(A):PD4-1
NAME	PNoonah	HRood 1	CBerlinger		GHubbard
DATE	2/1/93	2/12/93	2-123/93	<b>3</b> /)/93	3 11/ 193

OFFICIAL RECORD COPY Document Name: C0085323.AMD

Docket No. 50-298

Mr. Guy R. Horn Nuclear Power Group Manager Nebraska Public Power District Post Office Box 499 Columbus, Nebraska 68602-0499

Dear Mr. Horn:

SUBJECT: COOPER NUCLEAR STATION - AMENDMENT NO. 159 TO FACILITY

OPERATING LICENSE NO. DPR-46 (TAC NO. M85323)

The Commission has issued the enclosed Amendment No. 159 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The amendment consists of revisions to the Technical Specifications (TS) in response to your application dated January 5, 1993.

The revisions modify the TS to delete the Limiting Conditions for Operation and Surveillance Requirements for Residual Heat Removal (RHR) and Core Spray (CS) low voltage auxiliary relays 27X3 1A/1B. Deletion of these relays from the TS reflects a design change which removes the relays from the plant, which will be implemented during the spring 1993 refueling outage.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly <u>Federal Register</u> notice.

Sincerely,

**/**S/

Harry Rood, Senior Project Manager Project Directorate IV-1 Division of Reactor Projects III/IV/V Office of Nuclear Reactor Regulation

#### Enclosures:

1. Amendment No. 159 to License No. DPR-46

2. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION:

Docket File NRC/Local PDR PD4-1 Reading H. Rood(2)M. Virgilio G. Hubbard P. Noonan J. Roe ACRS(10)(MSP315) OGC (MS15B18) D. Hagan (MS3206) G. Hill(4) Wanda Jones (MS7103) C. Grimes (MS11E22) PD4-1 Plant File E. Collins, RIVOPA (MS2G5) OC/LFMB(MS4503) R. Kopriva, RIV J. Gagliardo, RIV

OFC	LA:PD4-1	PM: PD4-1	BC: EFtB	OGCN BON	D(A):PD4-1
NAME	PNoonah	HRood 1	CBerlinger	U	GHubbard
DATE	2/1/93	2/12/93	213/93	<b>3</b> / ) /93	3 11/ 193



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

March 11, 1993

Docket No. 50-298

Mr. Guy R. Horn Nuclear Power Group Manager Nebraska Public Power District Post Office Box 499 Columbus, Nebraska 68602-0499

Dear Mr. Horn:

SUBJECT: COOPER NUCLEAR STATION - AMENDMENT NO. 159 TO FACILITY

OPERATING LICENSE NO. DPR-46 (TAC NO. M85323)

The Commission has issued the enclosed Amendment No. 159 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The amendment consists of revisions to the Technical Specifications (TS) in response to your application dated January 5, 1993.

The revisions modify the TS to delete the Limiting Conditions for Operation and Surveillance Requirements for Residual Heat Removal (RHR) and Core Spray (CS) low voltage auxiliary relays 27X3 1A/1B. Deletion of these relays from the TS reflects a design change which removes the relays from the plant, which will be implemented during the spring 1993 refueling outage.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly <u>Federal Register</u> notice.

Sincerely.

Harry Road

Harry Rood, Senior Project Manager Project Directorate IV-1

Division of Reactor Projects III/IV/V Office of Nuclear Reactor Regulation

Enclosures:

 Amendment No. 159 to License No. DPR-46

2. Safety Evaluation

cc w/enclosures: See next page Mr. Guy R. Horn Nuclear Power Group Manager Cooper Nuclear Station

cc:

Mr. G. D. Watson, General Counsel Nebraska Public Power District P. O. Box 499 Columbus, Nebraska 68602-0499

Cooper Nuclear Station
ATTN: Mr. John M. Meacham
Division Manager of Nuclear Operations
P. O. Box 98 Brownville, Nebraska 68321

Randolph Wood, Director Nebraska Department of Environmental Control P. O. Box 98922 Lincoln, Nebraska 68509-8922

Mr. Larry Bohlken, Chairman Nemaha County Board of Commissioners Nemaha County Courthouse 1824 N Street Auburn, Nebraska 68305

Senior Resident Inspector U.S. Nuclear Regulatory Commission P. O. Box 218 Brownville, Nebraska 68321

Regional Administrator, Region IV U.S. Nuclear Regulatory Commission 611 Ryan Plaza Drive, Suite 1000 Arlington, Texas 76011

Mr. Harold Borchert, Director Division of Radiological Health Nebraska Department of Health 301 Centennial Mall, South P. O. Box 95007 Lincoln, Nebraska 68509-5007



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

### NEBRASKA PUBLIC POWER DISTRICT

### DOCKET NO. 50-298

### COOPER NUCLEAR STATION

### AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 159 License No. DPR-46

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Nebraska Public Power District (the licensee) dated January 5, 1993, 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 license 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 2.C.(2) of Facility Operating License No. DPR-46 is hereby amended to read as follows:
  - 2. <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A, as revised through Amendment No. 159, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George T. Hubbard, Acting Director

Project Directorate IV-1

Lenge Hullair (

Division of Reactor Projects III/IV/V Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 11, 1993

### ATTACHMENT TO LICENSE AMENDMENT NO. 159

### FACILITY OPERATING LICENSE NO. DPR-46

### DOCKET NO. 50-298

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE PAGES	INSERT PAGES
53	53
55	55
70	70
71	71

## COOPER NUCLEAR STATION TABLE 3.2.B (PAGE 1) CIRCUITRY REQUIREMENTS CORE SPRAY SYSTEM

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components Per Trip System	Action Required When Component Operability Is Not Assured (1)	
Reactor Low Water Level	NBI-LIS-72 A, B, C, & D	≥-145.5 of Indicated Level	2	A	
Reactor Low Pressure	NBI-PS-52 A2 & C2 NBI-PIS-52 B & D (Switch #2)	≤450 psig	2	<b>A</b> (	
Drywell High Pressure	PC-PS-101, A, B, C & D	≤2 psig	2	A	
Core Spray Pump Disch. Pressure	CS-PS-44, A & B CS-PS-37, A & B	100 ≤ P ≤ 165 psig	2	* <b>A</b>	
Core Spray Pump Time Delay	CS-TDR-K16 A & B	9≤T≤11 seconds	1	В	
Low Voltage Relay Emerg. Bus	27X1 - 1F & 1G 27X2 - 1F & 1G	Loss of Voltage	1	В	
Pump Discharge Line Low Pressure	CM-PS-73, A & B	≥10 psig	(3)	D	

## COOPER NUCLEAR STATION TABLE 3.2.B (Page 3) RESIDUAL HEAT REMOVAL SYSTEM (LPCI MODE) CIRCUITRY REQUIREMENTS

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components Per Trip System (1)	Action Required When Component Operability Is Not Assured
RHR Pump Low Flow	RHR-dPIS-125 A & B	≥2500 gpm	1	A
Time Delays	RHR-TDR-K45, 1A&1B	4.25≤T≤5.75 min.	1	A
RHR Pump Start Time Delay	RHR-TDR-K75A & K70B RHR-TDR-K75B & K70A	4.5≤T≤5.5 Sec. ≤.5 sec.	1 1	<b>A</b> (
RHR Heat Exchanger Bypass T.D.	RHR-TDR-K93, A & B	1.8≤T≤2.2 min.	1	В
RHR Crosstie Valve Position	RHR-LMS-8	Valve Not closed	(3)	E
Bus 1F Low Volt. Aux. Relays	27 X 1/1F 27 X 2/1F	Loss of Voltage Loss of Voltage	1 1	B B
Bus 1G Low Volt. Aux. Relays	27 X 1/1G 27 X 2/1G	Loss of Voltage Loss of Voltage	1	В
Pump Discharge Line	CM-PS-266 CM-PS-270	≥5 psig ≥15 psig	(3) (3)	D D
Emergency Buses Undervoltage Relays (degraded voltage)	27/1F-2, 27/1FA-2 27/1G-2, 27/1GB-2	$3880V \pm 52V$ 7.5 second $\pm .8$ sec. time delay	2 2 1	B B B
Emergency Buses Loss of Voltage Relays	27/1F-1, 27/1FA-1, 27/1G-1, 27/1GB-1, 27/ET-1, 27/ET-2	2300V $\pm 5$ % 0.0 $\leq$ T $\leq$ 5.0 sec. T = Time Delay	1	<b>B</b>
Emergency Buses Under- Voltage Relays Timers	27X7/1F, 27X7/1G,	5 second ±.5 sec.	1	В

## COOPER NUCLEAR STATION TABLE 4.2.B (Page 1) CORE SPRAY SYSTEM TEST & CALIBRATION FREQUENCIES

。 11		Item	Item I.D. No.	Functional Test Fre	q. Calibration Freq.	Instrument Check			
<del>7,121,139,</del>	<u>Ins</u>	Instrument							
<del>.39 ,</del> 159		Reactor Low Water Level Reactor Low Pressure	NBI-LIS-72, A,B,C, & D NBI-PS-52, A1,A2,C1, & C2 NBI-PIS-52, B & D	Once/Month (1) Once/Month (1)	Once/3 Months Once/3 Months	Once/Day None			
9	3. 4.	Drywell High Pressure Core Spray Pump Disch. Press.	PC-PS-101, A,B,C, & D CS-PS-44, A & B CS-PS-37, A & B	Once/Month (1) Once/Month (1) Once/Month (1)	Once/3 Months Once/3 Months Once/3 Months	None None None			
	5.	Core Spray Pump Time Delay	CS-TDR - K16, A & B	Once/Month (1)	Once/Oper. Cycle (4)	None			
•	6.	Emergency Bus Low Volt Relay	27X1 - 1F & 1G 27X2 - 1F & 1G	Once/Oper. Cycle Once/Oper. Cycle	N.A. N.A.	None None			
70-	7.	Pump Disch. Line Low Press.	CM-PS-73, A & B	Once/3 Months	Once/3 Months	None			
	Log	<u>Logic (4) (6)</u>							
	1. 2. 3.	Logic Power Monitor Core Spray Initiation Pump & Valve (Signal Override) Control		Once/6 Months Once/6 Months Once/6 Months	N.A. N.A. N.A.	N.A. N.A. N.A.			

# COOPER NUCLEAR STATION TABLE 4.2.B (Page 2) RHR SYSTEM TEST & CALIBRATION FREQUENCIES

Item	Item I.D. No.	Functional Test Freq.	Calibration Freq.	Instrumen Check
<u>nstrumentation</u>				
1. Drywell High Pressure 2. Reactor Low Water Level 3. Reactor Vessel Shroud Level 4. Reactor Low Pressure 5. Reactor Low Pressure 6. Drywell PressContainment Spray 7. RHR Pump Discharge Press. 8. RHR Pump Discharge Press. 9. RHR Pump Low Flow Switch 10. RHR Pump Low Flow Switch 10. RHR Pump Start Time Delay 11. RHR Injection Valve Close T.D. 12. RHR Pump Start Time Delay 13. RHR Heat Exchanger Bypass T.D. 14. RHR Cross Tie Valve Position 15. Low Voltage Relays 16. Low Voltage Relays 17. Pump Disch. Line Press. Low 18. Emergency buses Undervoltage 19. Relays (Degraded Voltage) 20. Emergency Buses Loss of	PC-PS-101, A, B, C & D NBI-LIS-72, A, B, C & D #1 NBI-LITS-73, A & B #1 RR-PS-128 A & B NBI-PS-52 A1,A2,C1, & C2 NBI-PIS-52 B & D PC-PS-119, A,B,C & D RHR-PS-105, A,B,C & D RHR-PS-105, A,B,C & D RHR-PS-105, A,B,C & B RHR-TDR-K70, A & B RHR-TDR-K70, A & B RHR-TDR-K75, A & B RHR-TDR-K93, A & B RHR-LMS-8 27 x 2/1F, 27 X 2/1G 27 X 1/1F, 27 X 1/1G CM-PS-266, CM-PS-270 27/1F-2, 27/1FA-2, 27/1G-1,	Once/Month (1)	Once/3 Months Once/Oper. Cycle N.A.	None Once/De Once/De Once/De None None None None None None None Non
Emouse D.	27/1GB-1, 27/ET-1, 27/ET-2 27X7/1F, 27X7/1G	Once/Month Once/Month	0 /10 **	Once/12 hrs None



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

## SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO. 159 TO FACILITY OPERATING LICENSE NO. DPR-46

### NEBRASKA PUBLIC POWER DISTRICT

### COOPER NUCLEAR STATION

### DOCKET NO. 50-298

### 1.0 INTRODUCTION

By letter dated January 5, 1993, the Nebraska Public Power District (the licensee) submitted a request for changes to the Cooper Nuclear Station (CNS) Technical Specifications (TS). The requested changes modify the TS to delete the Limiting Conditions for Operation and Surveillance Requirements for Residual Heat Removal (RHR) and Core Spray (CS) low voltage auxiliary relays 27X3 1A/1B. Deletion of these relays from the TS reflects a design change to install a new Emergency Transformer. This change, which will result in the 27X3 1A/1B relays being removed from the plant, is scheduled to be implemented during the spring 1993 refueling outage.

The specific changes made to the TS are as follows:

- A. On TS Page 53, Table 3.2.B (Page 1), "Aux. Bus Low Voltage Relay 27X3 1A & 1B" is removed.
- B. On TS Page 55, Table 3.2.B (Page 3), "Bus 1A Low Voltage Aux. Relay 27 X 3/1A", and "Bus 1B Low Voltage Aux. Relay 27 X 3/1B" are removed.
- C. On TS Page 70, Table 4.2.B (Page 1), "Aux. Bus Low Voltage Relay 27X3 -1A & 1B" is removed.
- D. On TS Page 71, Table 4.2.B (Page 2), "Low Voltage Relays 27 X 3/1A", and "Low Voltage Relays 27 X 3/1B" are removed.

#### 2.0 EVALUATION

The Cooper Nuclear Station has two levels of undervoltage protection for each of the two 4160 Vac emergency buses, F and G. The first level is an instantaneous undervoltage scheme that was installed during plant construction. The first level undervoltage relays (27/1F and 27/1G) are required by the TS to have a setpoint of 2300 V  $\pm$  5% with a time delay between 0.0 and 5.0 seconds. The second level of undervoltage protection is a sustained undervoltage scheme that was installed in 1978 in response to a June 3, 1977 letter from the NRC staff concerning susceptibility of onsite electrical equipment to sustained degraded grid voltage. The second level of

undervoltage protection for each electrical division includes two sets of undervoltage relays having contacts in series with a separate timer (relays 27/1F-1, 27/1FA-1, 27/1G-1, 27/1GB-1, and timers 27X7/1F and 27X7/1G). The undervoltage relays also incorporate integral timers. These undervoltage relays are required by the TS to have a setpoint of  $3880 \text{ V} \pm 52 \text{ V}$  and have a time delay set at 7.5 seconds  $\pm$  0.8 seconds. The TS require the separate timers in series with the relay contacts to be set at  $5\pm0.5$  seconds. These relays and timers perform the main undervoltage protection functions for emergency buses F and G.

The RHR and CS relays 27X3 1A/1B are auxiliary relays in the first-level (loss of voltage) undervoltage protection scheme for the normal-service buses 1A and 1B. The relays are presently listed in TS Tables 3.2.B and 4.2.B. Emergency buses 1F and 1G normally receive power from the Normal Station Service Transformer (NSST) or the Startup Station Service Transformer (SSST) via buses 1A and 1B respectively, with backup power directly provided by either the Emergency Station Service Transformer (ESST) or the Emergency Diesel Generator (EDG).

In its January 5, 1993, letter, the licensee stated that when the RHR and CS 27X3 lA/lB relays were originally included in the CNS design, their function was to initiate a block start signal of the Emergency Core Cooling System (ECCS) pumps onto the SSST when voltage was available on buses 1A and 1B and the tie breakers between buses 1A and 1F and 1B and 1G were closed during a design basis Loss of Coolant Accident (LOCA). However, the licensee, in 1988, removed the block start loading of the SSST and incorporated sequential loading of the ECCS pumps from this power source. Since that time, the RHR and CS 27X3 lA/lB relays have functioned to detect whether power is available to buses 1A and 1B from the SSST and to bypass the sequential loading timers for the ECCS pumps during a design basis LOCA.

However, with the existing bus 1F and 1G first-level undervoltage systems and the second-level undervoltage system as modified in 1988, the RHR and CS 27X3 1A/1B relays are redundant. The bus 1F and 1G first-level undervoltage relay system will ensure an immediate transfer of power sources on loss of voltage to buses 1F and 1G when powered from the SSST or ESST and initiate the sequential loading timer. The second-level undervoltage relay system logic will ensure that buses 1F and 1G are powered either from offsite sources with adequate voltage or the EDGs. As noted above, the first- and the second-level undervoltage relays are currently controlled by the CNS TS with attendant setpoints and surveillance frequencies to ensure they are operable.

During the upcoming spring 1993 refueling outage, the licensee plans to replace the existing ESST with a new Emergency Transformer. Included as part of the installation of the new Emergency Transformer will be overvoltage protective relays in the control logic for the 4160 volt switchgear breakers 1FS and 1GS which connect the new Emergency Transformer to the 4160 F and G buses. This transformer replacement will require the use of the 52a contacts from breakers 1FS and 1GS in the new overvoltage relay protection scheme. Thus, by removing the redundant RHR and CS power monitoring logic, the 52a

contacts from breakers 1FS/1GS will be available for use with the new Emergency Transformer.

The licensee states in its January 5, 1993 submittal, that removal of the RHR and CS 27X3 1A/1B relays and the RHR and CS relay logic modifications will not change the operation, duration, or timing of the sequential loading logic for the ECCS loads. The RHR and CS emergency core cooling systems will still perform their intended safety function under LOCA conditions as described in the Updated Safety Analysis Report (USAR). By maintaining the safety function of these ECCS systems, CNS will continue to meet the criteria prescribed in the 10 CFR 50.46 and Appendix K analysis assuring that the ECCS are capable of meeting their design bases and licensing requirements. The removal of the RHR and CS 27X3 1A/1B relays will simplify the RHR and CS pump start circuitry while providing the same safety function. In summary, the licensee states that the proposed design and TS changes will not change the performance or safety function of the RHR or CS systems.

In its review of the proposed changes, the NRC staff has reviewed the licensee's submittal of January 5, 1993, as well as the previously issued amendments related to the affected systems, and has discussed the proposed change with the licensee in telephone calls. Based on its review, the staff finds acceptable the proposed deletion of relays RHR and CS 27X3 1A/1B from the CNS TS, because the licensee will use a revised undervoltage protection scheme that fulfills the same function as the previous system, without use of these relays.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Nebraska State official was notified of the proposed issuance of the amendment. The State official had no comment.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (58 FR 7001). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

### 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: H. Rood

Date: March 11, 1993