

February 11, 1988

Docket No. 50-298

*Posted
Amdt. 115
to DPR-46*

Mr. George A. Trevors, Division
Manager - Nuclear Support
Nuclear Power Group
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68601

Dear Mr. Trevors:

SUBJECT: COOPER NUCLEAR STATION, AMENDMENT NO. 115, TO FACILITY
OPERATING LICENSE NO. DPR-46 (TAC NO. 66767)

The Commission has issued the enclosed Amendment No. 115 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. This amendment consists of changes to the Technical Specifications in response to your application dated December 1, 1987 (Change No. 49).

The amendment changes the Technical Specifications to (1) revise the Source Range Monitor and Intermediate Range Monitor operability requirements to clarify that negative power supply voltage is required for operability, (2) delete operability and surveillance requirements for certain post-accident monitoring instrumentation during shutdown and refueling conditions, and (3) revise an incorrect statement regarding the main steam line high flow isolation instrumentation setpoint.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

/s/

William O. Long, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 115 to
License No. DPR-46
2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. George A. Trevors
Nebraska Public Power District

Cooper Nuclear Station

cc:

Mr. G. D. Watson, General Counsel
Nebraska Public Power District
P. O. Box 499
Columbus, Nebraska 68601

Cooper Nuclear Station
ATTN: Mr. Guy R. Horn, Division
Manager of Nuclear Operations
P. O. Box 98
Brownville, Nebraska 68321

Director
Nebraska Department of Environmental
Control
P. O. Box 94877
State House Station
Lincoln, Nebraska 68509-4877

Mr. William Siebert, Commissioner
Nemaha County Board of Commissioners
Nemaha County Courthouse
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 Borchart, Director
Division of Radiological Health
Department of Health
301 Centennial Mall, South
P. O. Box 95007
Lincoln, Nebraska 68509



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. 115
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 December 1, 1987, 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.

ATTACHMENT TO LICENSE AMENDMENT NO.115

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 areas are indicated by marginal lines.

Pages

52
62
67a
67b

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) Technical Specification

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

3. The changes related to SRM/IRM power supply become effective 12 months from this date. The remaining changes are effective immediately.

FOR THE NUCLEAR REGULATORY COMMISSION

Jose A. Calvo

Jose A. Calvo, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 11, 1988

NOTES FOR TABLE 3.2.A

1. Whenever Primary Containment integrity is required there shall be two operable or tripped trip systems for each function.
2. If the minimum number of operable instrument channels per trip system requirement cannot be met by a trip system, that trip system shall be tripped. If the requirements cannot be met by both trip systems, the appropriate action listed below shall be taken.
 - A. Initiate an orderly shutdown and have the reactor in a cold shutdown condition in 24 hours.
 - B. Initiate an orderly load reduction and have the Main Steam Isolation Valves shut within 8 hours.
 - C. Isolate the Reactor Water Cleanup System.
 - D. Isolate the Shutdown Cooling System.
3. Two required for each steam line.
4. These signals also start the Standby Gas Treatment System and initiate Secondary Containment isolation.
5. Not required in the refuel, shutdown, and startup/hot standby modes (interlocked with the mode switch).
6. Requires one channel from each physical location for each trip system.
7. Low vacuum isolation is bypassed when the turbine stop is not full open, manual bypass switches are in bypass and mode switch is not in RUN.
8. The instruments on this table produce primary containment and system isolations. The following listing groups the system signals and the system isolated.

Group 1

Isolation Signals:

1. Reactor Low Low Low Water Level (≥ -145.5 in.)
2. Main Steam Line High Radiation (3 times full power background)
3. Main Steam Line Low Pressure (≥ 825 psig in the RUN mode)
4. Main Steam Line Leak Detection ($\leq 200^\circ\text{F}$)
5. Condenser Low Vacuum ($> 7''$ Hg vacuum)
6. Main Steam Line High Flow ($\leq 150\%$ of rated flow)

Isolations:

1. MSIV's
2. Main Steam Line Drains

NOTES FOR TABLE 3.2.C

1. For the startup and run positions of the Reactor Mode Selector Switch, the Control Rod Withdrawal Block Instrumentation trip system shall be operable for each function. The SRM and IRM blocks need not be operable in "Run" mode, and the APRM (flow biased) and RBM rod blocks need not be operable in "Startup" mode. The Control Rod Withdrawal Block Instrumentation trip system is a one out of "n" trip system, and as such requires that only one instrument channel specified in the function column must exceed the Trip Level Setting to cause a rod block. By utilizing the RPS bypass logic (see note 5 below and note 1 of Table 3.1.1) for the Control Rod Withdrawal Block Instrumentation, a sufficient number of instrument channels will always be operable to provide redundant rod withdrawal block protection.
2. W is the two-loop recirculation flow rate in percent of rated. Trip level setting is in percent of rated power (2381 MWt). N is the RBM setpoint selected (in percent) and is calculated in accordance with the methodology of the latest NRC approved version of NEDE-24011-P-A.
3. IRM downscale is bypassed when it is on its lowest range.
4. This function is bypassed when the count is ≥ 100 cps and IRM above range 2.
5. By design one instrument channel; i.e., one APRM or IRM per RPS trip system may be bypassed. For the APRM's and IRM's, the minimum number of channels specified is that minimum number required in each RPS channel and does not refer to a minimum number required by the control rod block instrumentation trip function. By design only one of two RBM's or one of four SRM's may be bypassed. For the SRM's, the minimum number of channels specified is the minimum number required in each of the two circuit loops of the Control Rod Block Instrumentation Trip System. For the RBM's, the minimum number of channels specified is the minimum number required by the Control Rod Block Instrumentation Trip System as a whole (except when a limiting control rod pattern exists and the requirements of Specification 3.3.B.5 apply).
6. IRM channels A,E,C,G all in range 8 or higher bypasses SRM channels A&C functions. IRM channels B,F,D,H all in range 8 or higher bypasses SRM channels B&D functions.
7. This function is bypassed when IRM is above range 2.
8. This function is bypassed when the mode switch is placed in Run.
9. This function is only active when the mode switch is in Run.
10. The inoperative trips are produced by the following functions:
 - a. SRM and IRM
 - (1) Mode switch not in operate
 - (2) Power supply voltage low
 - (3) Circuit boards not in circuit
 - (4) Loss of negative Supply voltage

COOPER NUCLEAR STATION
TABLE 3.2.H
POST-ACCIDENT MONITORING INSTRUMENTATION REQUIREMENTS*

Instrument	Instrument ID Number	Range	Minimum Number of Operable Instrument Channels	Action Required When Component Operability Is Not Assured
Elevated Release Point (ERP) Monitor (High Range Noble Gas)	RMP-RM-3B	1.00E-2 to 1.00E+5 $\mu\text{c/cc}$ (Xe-133 Equivalent)	1 (Note 1)	A
Turbine Building Ventilation Exhaust Monitor (High Range Noble Gas)	RMV-RM-20B	1.00E-2 to 1.00E+5 $\mu\text{c/cc}$ (Xe-133 Equivalent)	1 (Note 1)	A
Radwaste/Augmented Radwaste Exhaust Monitor (High Range Noble Gas)	RMV-RM-30B	1.00E-2 to 1.00E+5 $\mu\text{c/cc}$ (Xe-133 Equivalent)	1 (Note 1)	A
Primary Containment Gross Radiation Monitor	RMA-RM-40A RMA-RM-40B	1.0-1.0E+7 R/Hr. 1.0-1.0E+7 R/Hr.	2 (Note 1)	A

*Note: Other Post-Accident Monitoring Instrumentation is located in Table 3.2.F- Drywell Pressure, PC-PR-1A and 1B, Suppression Chamber/Torus Water Level PC-LR-1A and 1B

NOTES FOR TABLE 3.2.H

Action:

- A. With the number of operable components less than required by the minimum component operable requirements, initiate the preplanned alternate method of monitoring the appropriate parameter(s) within 72 hours, and:
 - 1) either restore the inoperable component(s) to operable status within 7 days of the event, or
 - 2) prepare and submit a Special Report to the Commission within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.
- 1. These instruments are required to be operable at all times except when the reactor is in cold shutdown or in the REFUEL mode during a refueling outage.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

By letter dated December 1, 1987, to licensee requested an amendment to the facility Technical Specifications to (1) revise the Source Range Monitor (SRM) and Intermediate Range Monitor (IRM) operability requirements to clarify that negative power supply voltage is required for operability, (2) delete operability and surveillance requirements for certain post-accident monitoring instrumentation during shutdown and refueling conditions, and (3) revise an incorrect statement regarding the main steam line (MSL) high flow isolation instrumentation setpoint.

2.0 DISCUSSION

- A. SRM and IRM Requirements: On June 16, 1986, while in the refueling mode of operation, a BWR/3 facility experienced multiple failures of IRM 3/4 Ampere fuses connected to the ± 24 VDC bus. The event was caused by a surge in the 24 VDC system resulting from a transient while switching on the 480 VAC power supply. After replacing only the blown fuses for the ± 24 VDC bus all inoperative IRM channels appeared to be operating normally. The loss of signal processing, which requires -24 VDC, was not detected until later surveillance tests were conducted prior to startup. During the period of loss of -24 VDC power, certain signal processing functions of the SRM and IRM systems were lost rendering the systems inoperable. Subsequently, the NSSS vendor recommended a plant modification to provide negative voltage sensing relays to trip SRM/IRM channels to INOPERABLE status upon loss of -24 VDC power (General Electric Co. Service Information Letter 445). Such instrumentation was provided originally for the +24 VDC power supplies only.

Evaluation: The protective functions provided by the SRM and IRM systems are not required for protection against the analyzed transients and accidents applicable to Cooper. For the Rod Withdrawal Event and Control Rod Drop Event, the 120 percent APRM trip function, which is not affected by loss of negative voltage, is credited for protection. The modification is, however, desirable for the purpose of providing backup protection during plant operation and core monitoring during subcritical operations. The proposed modification will be implemented in accordance with criteria for ESSENTIAL (safety-grade) equipment and is consistent with Paragraph III.2.c of Standard Review Plan Section 7.2 which requires power supply fail-safe design of Reactor Protection Systems.

- B. Post Accident Monitoring Instrumentation: Section 3.2.H of the Technical Specifications requires that a minimum number of operable channels for the High Range Noble Gas Monitor for the Elevated Release Point, the Turbine Building Ventilation Exhaust Gas Monitor, the Radwaste/Augmented Radwaste High Range Noble Gas Monitor, and the Primary Containment Gross Radiation Monitor be operable at all times. The proposed amendment would revise applicability requirements to suspend the operability requirements during shutdown and refueling conditions. This would facilitate maintenance and testing. The current operability requirements were implemented in Amendment 90 which added new Technical Specifications based on staff guidance provided by Generic Letter (GL) 83-36. The GL 83-36 guidance allows that the instruments be inoperable during shutdown and refueling (conditions other than Modes 1, 2, and 3), however, Amendment 90 as issued did not contain such a provision. The proposed amendment would correct that deficiency and is therefore acceptable.
- C. MSL High Flow Setpoint: In Amendment 96 the MSL High Flow Isolation Setpoint was revised from 140% of rated flow to 150% of rated flow. Due to an administrative oversight in preparation of the amendment, one of the affected pages of the Technical Specifications (Page 52) was not revised. The proposed amendment would revise Page 52 to be consistent with Pages 50 and 84 as amended in Amendment 96. This change is therefore acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

This amendment involves changes in the use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in test requirements. The 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. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 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.

4.0 CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: February 11, 1988

Principal Contributor: William Long