

February 25, 1991

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. 136 TO FACILITY
OPERATING LICENSE NO. DPR-46 (TAC NO. 75570)

The Commission has issued the enclosed Amendment No.136 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The amendment consists of changes to the Technical Specifications in response to your application dated December 8, 1989.

The amendment changes the Technical Specifications to:

1. Increase the surveillance interval from once per year to once per 18 months for the surveillances that are normally carried out during refueling outages,
2. Reduce the face velocity inlet condition for the Laboratory Carbon Sample Analysis Test to ≥ 27 FPM, and
3. Other minor editorial changes that provide clarification to the wording of the existing specifications.

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

Sincerely,

Original signed by
Paul W. O'Connor, Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

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Enclosures:

1. Amendment No.136to Licensee No. DPR-46
2. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION:

Docket File	NRC/Local PDR	PD4-1 Reading
M. Virgilio	PD4-1 Plant File	ACRS(10)(MSP315)
OGC(MS15B18)	D. Hagan(MS3206)	G. Hill(4)(P1-37)
T. Quay	J. Calvo(MS11F22)	W. Jones(MNBB7103)
GPA/PA(MS2G5)	ARM/LFMB(MS4503)	L. Constable,RIV
P. Noonan		

*See Previous Concurrence

OFC	:*PD4-1/LA	:*PD4-1/PM	:*OGC	:PD4-1/D	:	:
NAME	:PNoonan	:PO'Connor:lh:		:TQuay <i>TR</i>	:	:
DATE	:02/06/91	:02/06/91	:02/07/91	:2/25/91	:	:

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[Signature]



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

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Nuclear Power Group Manager
Nebraska Public Power District
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3. Other minor editorial changes that provide clarification to the wording of the existing specifications.

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

Sincerely,

A handwritten signature in cursive script that reads "Paul W. O'Connor".

Paul W. O'Connor, Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 136 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

Dennis Grams, 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. 136
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 8, 1989, 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.

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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 Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 136, 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



Theodore R. Quay, Director
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 25, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 136

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

78
165
183
215
215e

INSERT PAGES

78
165
183
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215e

COOPER NUCLEAR STATION
 TABLE 4.2.D
 MINIMUM TEST AND CALIBRATION FREQUENCIES FOR RADIATION MONITORING SYSTEMS

System	Instrument I.D. No.	Functional Test Freq.	Calibration Freq.	Instrument Check
<u>Instrument Channels</u>				
Steam Jet Air Ejector Off-Gas System	RMP-RM-150 A & B	(12)	(12)	(12)
Reactor Building Isolation and Standby Gas Treatment Initiation	RMP-RM-452 A & B	(12)	(12)	(12)
Liquid Radwaste Discharge Isolation	RMP-RM-1	(11)	(11)	(11)
Main Control Room Ventilation Isolation	RMV-RM-1	Once/Month (1)	Once/3 Months	Once/Day
Mechanical Vacuum Pump Isolation	RMP-RM-251, A-D		See Tables 4.1.1 & 4.1.2	
<u>Logic Systems</u>				
SJAE Off-Gas Isolation		Once/18 Months		
Standby Gas Treatment Initiation		Once/18 Months		
Reactor Building Isolation		Once/18 Months		
Liquid Radwaste Disch. Isolation		Once/6 Months		
Main Control Room Vent Isolation		Once/6 Months		
Mechanical Vacuum Pump Isolation		Once/Operating Cycle		

LIMITING CONDITIONS FOR OPERATION.

3.7 (cont'd.)

B. Standby Gas Treatment System

1. Except as specified in 3.7.B.3 below, both standby gas treatment systems shall be operable at all times when secondary containment integrity is required.
- 2.a. The results of the in-place cold DOP leak tests on the HEPA filters shall show $\geq 99\%$ DOP removal. The results of the halogenated hydrocarbon leak tests on the charcoal adsorbers shall show $\geq 99\%$ halogenated hydrocarbon removal. The DOP and halogenated hydrocarbon tests shall be performed at a Standby Gas Treatment flowrate of ≤ 1780 CFM and at a Reactor Building pressure of $\leq .25$ " Wg.
- b. The results of laboratory carbon sample analysis shall show $\geq 99\%$ radioactive methyl iodide removal with inlet conditions of: velocity ≥ 27 FPM, ≥ 1.75 mg/m³ inlet methyl iodide concentration, $\geq 70\%$ R.H. and $\leq 30^\circ\text{C}$.
- c. Each fan shall be shown to provide 1780 CFM $\pm 10\%$.
3. From and after the date that one standby gas treatment system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such system is sooner made operable, provided that during such seven days all active components of the other standby gas treatment system, and its associated diesel generator, shall be operable.

Fuel handling requirements are specified in Specification 3.10.E.

SURVEILLANCE REQUIREMENTS

4.7 (cont'd.)

B. Standby Gas Treatment System

1. At least once per operating cycle the following conditions shall be demonstrated.
 - a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at the system design flow rate.
 - b. Inlet heater input is capable of reducing R.H. from 100 to 70% R.H.
- 2.a. The tests and sample analysis of Specification 3.7.B.2 shall be performed at least once every 18 months for standby service or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.
- b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.
- c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.
- d. Each system shall be operated with the heaters on at least 10 hours every month.
- e. Test sealing of gaskets for housing doors downstream of the HEPA filters and charcoal adsorbers shall be performed at, and in conformance with, each test performed for compliance with Specification 4.7.B.2.a and Specification 3.7.B.2.a.
3. System drains where present shall be inspected quarterly for adequate water level in loop-seals.

4.7.B & 4.7.C BASES

with an adsorbent qualified according to Table 5.1 of ANSI N509-1980. The replacement tray for the adsorber tray removed for the test should meet the same adsorbent quality. Tests of the HEPA filters with DOP aerosol shall be performed in accordance to ANSI N510-1980. Any filters found defective shall be replaced with filters qualified pursuant to Regulatory Position C.3.d. of Regulatory Guide 1.52, Revision 2, March, 1978.

All elements of the heater should be demonstrated to be functional and operable during the test of heater capacity. Operation of the heaters will prevent moisture buildup in the filters and adsorber system.

With doors closed and fan in operation, DOP aerosol shall be sprayed externally along the full linear periphery of each respective door to check the gasket seal. Any detection of DOP in the fan exhaust shall be considered an unacceptable test result and the gaskets repaired and test repeated.

If system drains are present in the filter/adsorber banks, loop-seals must be used with adequate water level to prevent by-pass leakage from the banks.

If significant painting, fire or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemicals or foreign material, the same tests and sample analysis shall be performed as required for operational use. The determination of significance shall be made by the operator on duty at the time of the incident. Knowledgeable staff members should be consulted prior to making this determination.

Demonstration of the automatic initiation capability and operability of filter cooling is necessary to assure system performance capability. If one standby gas treatment system is inoperable, the other system must be tested daily. This substantiates the availability of the operable system and thus reactor operation or refueling operation can continue for a limited period of time.

3.7.D & 4.7.D BASES

Primary Containment Isolation Valves

Double isolation valves are provided on lines penetrating the primary containment and open to the free space of the containment. Closure of one of the valves in each line would be sufficient to maintain the integrity of the pressure suppression system. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident.

The maximum closure times for the automatic isolation valves of the primary containment and reactor vessel isolation control system have been selected in consideration of the design intent to prevent core uncovering following pipe breaks outside the primary containment and the need to contain released fission products following pipe breaks inside the primary containment.

These valves are highly reliable, have a low service requirement, and most are normally closed. The initiating sensors and associated trip channels are also checked to demonstrate the capability for automatic isolation. The test interval of once per operating cycle for automatic initiation

LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE REQUIREMENTS3.12 Additional Safety Related Plant CapabilitiesApplicability:

Applies to the operating status of the main control room ventilation system, the reactor building closed cooling water system and the service water system.

Objective:

To assure the availability of the main control room ventilation system, the reactor building closed cooling water system and the service water system upon the conditions for which the capability is an essential response to station abnormalities.

A. Main Control Room Ventilation

1. Except as specified in Specification 3.12.A.e below, the control room air treatment system, the diesel generators required for operation of this system and the main control room air radiation monitor shall be operable at all times when containment integrity is required.
- 2.a. The results of the in-place cold DOP leak tests on the HEPA filters shall show $\geq 99\%$ DOP removal. The results of the halogenated hydrocarbon leak tests on the charcoal adsorbers shall show $\geq 99\%$ halogenated hydrocarbon removal. The DOP and halogenated hydrocarbon tests shall be performed at a flowrate of ≤ 341 CFM.
- b. The results of laboratory carbon sample analysis shall show $\geq 99\%$ radioactive methyl iodide removal with inlet conditions of: velocity ≥ 22 FPM, ≥ 1.75 mg/m³ inlet iodide concentration, $\geq 95\%$ R.H. and $\leq 30^\circ\text{C}$.
- c. Each fan shall be shown to provide 341 CFM $\pm 10\%$.

4.12 Additional Safety Related Plant CapabilitiesApplicability:

Applies to the surveillance requirements for the main control room ventilation system, the reactor building closed cooling water system and the service water system which are required by the corresponding Limiting Conditions for Operation.

Objective:

To verify that operability or availability under conditions for which these capabilities are an essential response to station abnormalities.

A. Main Control Room Ventilation

1. At least once per operating cycle, the pressure drop across the combined HEPA filters and charcoal absorber banks shall be demonstrated to be less than 6 inches of water at system design flow rate.
- 2.a. The tests and sample analysis of Specification 3.12.A.2 shall be performed at least once every 18 months for standby service or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.
- b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.
- c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal absorber bank or after any structural maintenance on the system housing.

3.12 BASES (cont'd)

heat exchanger. Valves are included in the common discharge header to permit the Seismic Class I service water system to be operated as two independent loops. The heat exchangers are valved such that they can be individually backwashed without interrupting system operation.

During normal operation two or three pumps will be required. Three pumps are used for a normal shutdown.

The loss of all a-c power will trip all operating service water pumps. The automatic emergency diesel generator start system and emergency equipment starting sequence will then start one selected service water pump in 30-40 seconds. In the meantime, the drop in service water header pressure will close the turbine building cooling water isolation valve guaranteeing supply to the reactor building, the control room basement, and the diesel generators from the one service water pump.

Due to the redundancy of pumps and the requirement of only one to meet the accident requirements, the 30 day repair time is justified.

D. Battery Room Ventilation

The temperature rise and hydrogen buildup in the battery rooms without adequate ventilation is such that continuous safe operation of equipment in these rooms cannot be assured.

4.12 BASES

A. Main Control Room Ventilation System

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop should be determined at least once per operating cycle to show system performance capability.

Tests of the charcoal adsorbers with halogenated hydrocarbon refrigerant should be performed in accordance with ANSI N510-1980.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. The test canisters that are installed with the adsorber trays should be used for the charcoal adsorber efficiency test. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced with an adsorbent qualified according to Table 5.1 of ANSI N509-1980. The replacement tray for the adsorber tray removed for the test should meet the same adsorbent quality. Tests of the HEPA filters with DOP aerosol shall be performed in accordance to ANSI N510-1980. Any HEPA filters found defective shall be replaced with filters qualified pursuant to Regulatory Position C.3.d of Regulatory Guide 1.52.

Operation of the system for 10 hours every month will demonstrate operability of the filters and adsorber system and remove excessive moisture built up on the adsorber.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 136 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 8, 1989, Nebraska Public Power District (NPPD) (the licensee) requested an amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The proposed amendment would:

1. Increase the surveillance interval from once per year to once per 18 months for three surveillances that are normally carried out during refueling outages,
2. Reduce the face velocity inlet condition for the Laboratory Carbon Sample Analysis Test to ≥ 27 FPM, and
3. Other minor editorial changes that provide clarification to the wording of the existing specifications.

2.0 DISCUSSION

2.1 Surveillance Intervals

NPPD has requested that the surveillance interval for the following Specifications be changed from once per year to once per eighteen months:

Table 4.2.D	Steam Jet Air Ejector Off Gas Isolation,
T.S.3.7.B.2.b	Standby Gas Treatment System tests and sample frequency,
T.S.4.12.A.2.a	Main Control Room Ventilation System tests and sample analysis.

At the time that the original Technical Specifications for the Cooper Nuclear Station were issued, the plant was operating on a one year operating cycle with an annual extended outage for refueling, maintenance, and surveillance.

Beginning with Cycle 14, in May 1990, Cooper has been operating on an 18 month fuel cycle that does not provide a plant shutdown to carry out annual surveillances.

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The staff intended that these surveillances be carried out with the plant in a shutdown condition because the risk to safety is lower in that mode of operation. Although the plant could be shut down after twelve months to carry out these surveillances, a plant shutdown, no matter how carefully carried out, involves some additional risk of initiating an unanticipated transient or challenging a safety system.

Since 1974, the NRC staff has utilized NUREG-0123, "Standard Technical Specifications For General Electric Boiling Water Reactors" (STS) to determine the format and content of the technical specifications that are issued to newly licensed plants, similar in design to the Cooper Nuclear Station. The surveillance intervals for these three specifications in the STS are set at eighteen months to assure once per cycle surveillance for plants that are operating on an eighteen month fuel cycle.

Based on the above discussion the staff finds that an eighteen month surveillance interval is acceptable for these three surveillances.

2.2 Laboratory Carbon Sample Analysis Face Velocity

Technical Specification 3.7.B.2.b specifies various test parameters and performance criteria that are applicable for the laboratory tests that must be carried out to assure the operability of the charcoal adsorbers in the Standby Gas Treatment System (SGTS). NPPD has recently modified the SGTS to increase the amount of charcoal in the SGTS filter banks. This modification increased the iodine removal effectiveness of the SGTS by increasing the total charcoal adsorber face area. The increased face area results in a reduced face velocity at the charcoal filters.

One controlling parameter for the SGTS charcoal test is that the face velocity used in the laboratory test must be equal to or greater than the actual face velocity of the charcoal adsorbers in the SGTS thus assuring that the test results are representative of the conditions in the SGTS charcoal trays. The result of the increased amount of charcoal is to reduce the actual face velocity in the SGTS charcoal adsorber to ≥ 27 feet per minute (FMP). NPPD has requested that the face velocity requirement in Specification 3.7.B.2.b be changed from ≥ 42 CFM to > 27 CFM. This change conforms the Technical Specification to the actual condition that exists in the plant and is acceptable to the staff.

2.3 Editorial Changes

NPPD has proposed to modify the wording of Technical Specifications 3.7.B.2.b and 3.12.A.2.a which relate to the test methodology used for the Standby Gas Treatment System and the Main Control Room Ventilation System, respectively. The changes are editorial in nature and result in a clearer and more easily understood statement of the staff's requirement. The modifications do not change the requirements or the manner in which they are met and are acceptable to the staff.

In addition, NPPD proposed to modify the Bases for the surveillance requirements for the Standby Gas Treatment System and the Main Control Room Ventilation System to document the use of American National Standards Institute Standard ANSI N509-1980 as the test methodology rather than the earlier Regulatory Guide 1.52. The use of ANSI N509-1980 is in conformance with the NRC staff's Standard Review Plan and is acceptable to the staff.

3.0 ENVIRONMENTAL CONSIDERATION

The amendment involves a change in a requirement with respect to the 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 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 exposures. 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 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.

4.0 CONCLUSION

The staff 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, 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.

Dated: February 25, 1991

Principal Contributor: Paul W. O'Connor