DISTRIBUTION
Docket
NRC PDR
Local PDR
ORB #2 Reading
KRGoller
TJCarter
RMdiggs
MHFletcher
OELD -McGuren
OI&E (3)
BJones (4)
BScharf (10)
JMcGough
ACRS (16)
OPA (CMiles)
VSteldo
TBAbernathy
JRBuchanan

APR 23 1976

Docket No. 50-298

Nebraska Public Power District
ATTN: Mr. J. M. Pilant, Director
Licensing and Quality Assurance
Post Office Box 499
Columbus, Nebraska 68601

Gentlemen:

In response to your request dated March 3, 1976, the Commission has issued the enclosed Amendment No. 24 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station.

The amendment consists of changes in the Technical Specifications to add new containment isolation valves which will serve as part of the new Containment Pressure Control system which maintains a differential pressure between the drywell and the suppression chamber.

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

Sincerely,

Original Signed by:
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:
1. Amendment No. 24 to License DPR-46
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

concurred on phone (attached)

OFFICE	OR:ORB #2	OR:ORB #2	OR:PSB	OR:AD/OT	OELD	OR:ORB #2
SURNAME	RMDiggs	MHFletcher:ah	ASchwencer	DEisenhut	McGuren	DLZiemann
DATE	4/23/76	4/23/76	4/ /76	4/ /76	4/23/76	4/23/76

Form AEC-318 (Rev. 9-53) AECM 0240

☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

4/23

DISTRIBUTION
Docket
NRC PDR
Local PDR
ORB #2 Reading
KRGoller
TJCarter
RMdiggs
MHFletcher
OELD -
OI&E (3)
BJones (4)
BScharf (10)
JMcGough
ACRS (16)
OPA (CMiles)
VSteldo
TBAbernathy
JRBuchanan

Docket No. 50-298

Nebraska Public Power District
ATTN: Mr. J. M. Pilant, Director
Licensing and Quality Assurance
Post Office Box 499
Columbus, Nebraska 68601

Gentlemen:

In response to your request dated March 3, 1976, the Commission has issued the enclosed Amendment No. 24 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station.

The amendment consists of changes in the Technical Specifications to add new containment isolation valves which will serve as part of the new Containment Pressure Control system which maintains a differential pressure between the drywell and the suppression chamber.

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

Sincerely,

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:
1. Amendment No. 24 to License DPR-46
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

OR:ORB #2	OR:ORB #2	OR:PSB	OR:AD:OE	OELD	OR:ORB #2
RMDiggs	MHFletcher:ah	ASchwencer	DEisenhut		DLZiemann
4/ /76	4/ /76	4/23/76	4/23/76	4/ /76	4/ /76

APR 23 1976

cc w/enclosures:
Gene Watson, Attorney
Barlow, Watson & Johnson
P. O. Box 81686
Lincoln, Nebraska 68501

Mr. Arthur C. Gehr, Attorney
Snell & Wilmer
400 Security Building
Phoenix, Arizona 85004

Auburn Public Library
118 - 15th Street
Auburn, Nebraska 68305

Mr. William Siebert, Commissioner
Nemaha County Board of Commissioners
Nebraska County Courtroom
Auburn, Nebraska 68305

cc w/enclosures and cy of NPPD's
filing dated 3/3/76:
Mr. D. Drain, Director
Department of Environmental Control
Executive Building, 2nd Floor
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. 24
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 March 3, 1976, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

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

FOR THE NUCLEAR REGULATORY COMMISSION
Original Signed by:
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: APR 23 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 24

FACILITY OPERATING LICENSE NO. DPR-46

DOCKET NO. 50-298

Replace existing pages 169, 173, and 174 of the Appendix A Technical Specifications with the attached revised pages bearing the same numbers. Changed areas on the revised pages are reflected by marginal lines.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

COOPER NUCLEAR STATION
TABLE 3.7.1 (Page 2)
PRIMARY CONTAINMENT ISOLATION VALVES

Valve & Steam	Number of Power Operated Valves		Maximum Operating Time (Sec)(1)	Normal Position (2)	Action On Initiating Signal (3)
	Inboard	Outboard			
Primary Containment Purge & Vent PC-246AV, PC-231MV		2	15	C	SC
Primary Containment & N_2 Supply PC-238AV, PC-232MV		2	15	C	SC
ACAD Supply					
MV 1303, MV 1304		2	15	O	GC
MV 1305, MV 1306		2	15	O	GC

TABLE 3.7.4

PRIMARY CONTAINMENT TESTABLE ISOLATION VALVES

PEN. NO.	VALVE NUMBERS	TEST MEDIA
X-7A	MS-AO-80A and MS-AO-86A, Main Steam Isolation Valves	Air
X-7B	MS-AO-80B and MS-AO-86B, Main Steam Isolation Valves	Air
X-7C	MS-AO-80C and MS-AO-86C, Main Steam Isolation Valves	Air
X-7D	MS-AO-80D and MS-AO-86D, Main Steam Isolation Valves	Air
X-8	MS-MO-74 and MS-MO-77, Main Steam Line Drain	Air
X-9A	RF-15CV and RF-16CV, Feedwater Check Valve	Water
X-9A	RCIC-AO-22, RCIC-MO-17, and RWCU-15CV, RCIC/RWCU Connection to Feedwater	Water
X-9B	RF-13CV and RF-14CV, Feedwater Check Valves	Water
X-9B	HPCI-AO-18 and HPCI-MO-57, HPCI Connection to Feedwater	Water
X-10	RCIC-MO-15 and RCIC-MO-16, RCIC Steam Line	Air
X-11	HPCI-MO-15 and HPCI-MO-16, HPCI Steam Line	Air
X-12	RHR-MO-17 and RHR-MO-18, RHR Suction Cooling	Water
X-13A	RHR-MO-25A and RHR-MO-27A, RHR Supply to RPV	Water
X-13B	RHR-MO-25B and RHR-MO-27B, RHR Supply to RPV	Water
X-14	RWCU-MO-15 and RWCU-MO-18, Inlet to RWCU System	Water
X-16A	CS-MO-11A and CS-MO-12A, Core Spray to RPV	Water
X-16B	CS-MO-11B and CS-MO-12B, Core Spray to RPV	Water
X-17	RHR-MO-32 and RHR-MO-33, RPV Head Spray	Air
X-18	RW-732AV and RW-733AV, Drywell Equipment Sump Discharge	Water
X-19	RW-765AV and RW-766AV, Drywell Floor Drain Sump Discharge	Water
X-25	PC-232MV and PC-238AV, Purge and Vent Supply to Drywell	Air
X-25	MV-1305 and MV-1306, ACAD Supply to Drywell	Air
X-26	PC-231MV and PC-246AV, Purge and Vent Exhaust from Drywell	Air

TABLE 3.7.4 (page 2)

PRIMARY CONTAINMENT TESTABLE ISOLATION VALVES

PEN. NO.	VALVE NUMBERS	TEST MEDIA
X-36	CRD-11CV and CRD-12CV, CRD Exhaust Water	Water
X-39A	RHR-MO-26A and RHR-MO-31A, Drywell Spray Header Supply	Air
X-39B	RHR-MO-26B and RHR-MO-31B, Drywell Spray Header Supply	Air
X-41	RRV-740AV and RRV-741AV, Reactor Water Sample Line	Water
X-42	SLC-12CV and SLC-13CV, Standby Liquid Control	Water
X-205	PC-233MV and PC-237AV, Purge and Vent Supply to Torus	Air
X-205	PC-13CV and PC-243AV, Torus Vacuum Relief	Air
X-205	PC-14CV and PC-244AV, Torus Vacuum Relief	Air
X-205	MV-1303 and MV-1304, ACAD Supply to Torus	Air
X-210A	RCIC-MO-27 and RCIC-13CV, RCIC Minimum Flow Line	Water
X-210A	RHR-MO-21A, RHR to Torus	Water
X-210A	RHR-MO-16A, RHR-10CV, and RHR-12CV, RHR Minimum Flow Line	Water
X-210B	RHR-MO-21B, RHR To Torus	Water
X-210B	HPCI-17CV and HPCI-MO-25, HPCI Minimum Flow Line	Water
X-210B	RHR-MO-16B, RHR-11CV, and RHR-13CV, RHR Minimum Flow Line	Water
X-210A and 211A	RHR-MO-34A, RHR-MO-38A, and RHR-MO-39A, RHR to Torus	Water
X-210B and 211B	RHR-MO-34B, RHR-MO-38B, and RHR-MO-39B, RHR to Torus	Water
X-212	RCIC-15CV and RCIC-37, RCIC Turbine Exhaust	Water
X-214	HPCI-15CV and HPCI-44, HPCI Turbine Exhaust	Water
X-214	HPCI-AO-70 and HPCI-AO-71, HPCI Turbine Exhaust Drain	Water
X-220	PC-230MV and PC-245AV, Purge and Vent Exhaust from Torus	Air
X-221	RCIC-12CV and RCIC-42, RCIC Vacuum Line	Air
X-222	HPCI-50 and HPCI-16CV, HPCI Turbine Drain	Water

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 24 TO LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

INTRODUCTION

By letter dated March 3, 1976, Nebraska Public Power District (NPPD) requested an amendment to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The request involves revisions to the Technical Specifications with regard to the addition of new primary containment isolation valves associated with the installation of a Containment Pressure Control (CPC) system.

BACKGROUND

As a result of recent structural analyses performed in conjunction with a generic review of pressure-suppression pool dynamic loads for the General Electric BWR Mark I containments, it was determined that if pool dynamic loads resulting from a postulated loss-of-coolant accident (LOCA) are considered, the margin of safety in the containment design for CNS is lower than originally intended. Subsequently, NPPD agreed to institute a "differential pressure control system" to mitigate the pool dynamic loads and thereby restore the margin of safety in the containment design. The differential pressure control system would establish a positive differential pressure between the drywell and torus regions of the containment. This would reduce the height of the water leg in the downcomers and subsequently would reduce the LOCA hydrodynamic loads.

To control combustible gases following a postulated loss-of-coolant accident, the drywell atmosphere is inerted with nitrogen during normal operation. The inclusion of a positive differential pressure between the drywell and torus results in a loss of nitrogen from the drywell to the torus airspace from leakage through the vacuum breakers on the vent headers. To minimize the loss of nitrogen from the system, NPPD has proposed the CPC system which would return the nitrogen in the torus to the drywell.

SYSTEM DESCRIPTION

The CPC system is external to the primary containment and consists of a piping loop between the torus and drywell. All piping and valves are ASME Section III, Class II Nuclear with a seismic I rating with the exception of approximately three feet of pipe on each side of the compressor. This piping is designed to the USAS B31.1 standard. It includes two flex lines and a check valve. The check valve has been seismically qualified to the response curve for CNS. The compressor is a heavy duty commercial type oilless reciprocating compressor seismically qualified to the response curve for CNS.

The piping connections to the torus and drywell include dual isolation valves at existing containment penetrations. The CPC suction line connects through isolation valves MV-1303 and MV-1304 in series to the torus vacuum relief line which enters the torus at penetration no. X-205. The discharge line connects through isolation valves MV-1305 and MV-1306 in series to the Purge and Vent Supply line which enters the drywell at penetration no. X-25. MV-1303 through MV-1306 automatically isolate on a Primary Containment Isolation System Group II signal. The occurrence of low reactor water level and high drywell pressure indicates the possibility of a loss-of-coolant accident (LOCA) and initiates a Group II signal. The CPC isolation valves are the only safety related components that must be included in the CNS Technical Specifications.

EVALUATION

The installation of the proposed pumpback system has required the addition of isolation valves where the suction and discharge lines connect to existing containment penetrations on the torus and drywell. The two outboard isolation valves, MV-1303 and MV-1305, receive 120 VAC control power from panel CP-CAD-1B circuit #2 and motive power from the 250 VDC bus. The two inboard isolation valves, MV-1304 and MV-1306, receive 120 VAC control power from panel CP-CAD-1A circuit #2 and motive power from the 125 VAC bus 1F. In addition to the separate motive power sources for the outboard and inboard isolation valves, separate Group 2 isolation signals are provided in that there is only one valve per line in each logic channel. The isolation relays for each valve are energized with the valve in an open position, and upon a loss of control power the valve will be closed by the motive power source.

The area of the reactor building where the isolation valves are housed has been reviewed for potential sources of missiles and pipe whip. Since there are no pumps or rotating machinery in the vicinity of the isolation valves, the possibility of missile damage from these sources does not exist. The possibility of high energy pipe whip damage to the isolation valves was considered using the criteria of CNS FSAR Amendment 25, "Effects of a Piping System Break Outside the Primary Containment." Because of the low probability of a high energy line break which would damage both of the isolation valves, the separation or physical protection of the isolation valves is not required.

Test connections have been provided so that the valves can be leak tested in accordance with Appendix J to 10 CFR 50. Preoperational leakage tests have been performed. The combined leakage rate of these tests when added to the leakage measured during the last complete test series is within the allowable limits.

We also have reviewed other potential effects the pumpback system could have on the consequences of a postulated loss-of-coolant accident. Potential steam bypass of the suppression pool could result from the direct communication of the drywell and torus air space. However, the low mass flow rate associated with the 1 inch line in the pumpback system in conjunction with the redundant capability to isolate both the suction and discharge lines will result in a negligible amount of steam bypass. In addition, two check valves, which would prevent reverse flow from the drywell and further mitigate the effects of steam bypass, are located in the discharge line.

We have reviewed the proposed pumpback system for the Cooper Nuclear Power Station with regard to both containment isolation capability and potential adverse effects on a postulated loss-of-coolant accident. The licensee has provided both redundant and diverse isolation capability in conjunction with the modifications to existing containment penetrations. In addition, the installation of the pumpback system will neither increase the probability of an occurrence, nor will it increase the consequences of accidents previously considered. Therefore, we conclude that pumpback system design is acceptable and that there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner.

ENVIRONMENTAL CONSIDERATION

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 statement, negative declaration, or environmental appraisal need not be prepared in connection with the issuance of this amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the changes do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the changes do 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: April 23, 1976

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-298

NEBRASKA PUBLIC POWER DISTRICT

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 24 to Operating License No. DPR-46, issued to the Nebraska Public Power District (the licensee), which revised Technical Specifications for operation of the Cooper Nuclear Station (the facility) located in Nemaha County, Nebraska. The amendment is effective as of its date of issuance.

This amendment added new containment automatic isolation valves. These valves will be utilized as part of the nitrogen recirculation system.

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 in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

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 statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of this amendment.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

For further details with respect to this action, see (1) the application for amendment dated March 3, 1976, (2) Amendment No. 24 to License No. DPR-46, and (3) the Commission's concurrently issued 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 Auburn Public Library, 118 - 15th Street, Auburn, Nebraska 68305. A copy of items (2) and (3) may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this APR 23 1976

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

OFFICE ➤						
SURNAME ➤						
DATE ➤						

Form AEC-318 (Rev. 9-53) AECM 0240

☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166