



Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402) 825-3811

CNSS933120

May 25, 1993

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

Cooper Nuclear Station Licensee Event Report 93-018, Revision 0, is forwarded as an attachment to this letter.

Sincerely,

R. L. Gardner
Plant Manager

RLG/ju

Attachment

cc: J. L. Milhoan
G. R. Horn
J. M. Meacham
R. E. Wilbur
V. L. Wolstenholm
D. A. Whitman
INPO Records Center
NRC Resident Inspector
R. J. Singer
CNS Training
CNS Quality Assurance

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PDR ADOCK 05000298
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LISCENSEE EVENT REFUGIT (LER)

FACILITY NAME (1) Cooper Nuclear Station										DOCKET NUMBER (2) 0 5 0 0 0 2 9 8						PAGE (3) 1 OF 0 3										
TITLE (4) Standby Gas Treatment System Inlet Damper Single Failure Vulnerability Due To Design Deficiency																										
EVENT DATE (5)				LER NUMBER (6)				REPORT DATE (7)				OTHER FACILITIES INVOLVED (8)														
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER		REVISION NUMBER		MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)											
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OPERATING MODE (9)			N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11)																						
POWER LEVEL (10) 0 0 0				20.402(b)	20.406(c)				X	50.72(a)(2)(iv)					73.71(b)											
				20.406(a)(1)(i)	50.36(e)(1)					50.73(a)(2)(v)					73.71(c)											
				20.406(a)(1)(ii)	50.36(e)(2)					50.73(a)(2)(vii)					OTHER (Specify in Abstract below and in Text, NRC Form 360A)											
				20.406(a)(1)(iii)	50.73(a)(2)(i)					50.73(a)(2)(viii)(A)																
				20.406(a)(1)(iv)	50.73(a)(2)(ii)					50.73(a)(2)(viii)(B)																
				20.406(a)(1)(v)	50.73(a)(2)(iii)					50.73(a)(2)(ix)																
LICENSEE CONTACT FOR THIS LER (12)																										
NAME										TELEPHONE NUMBER																
John R. Myers										AREA CODE		4 0 2 8 2 5 - 3 8 1 1														
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																										
CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS																
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR												
YES (If yes, complete EXPECTED SUBMISSION DATE)					X	NO																				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (18)

On April 30, 1993, during efforts associated with the Design Basis Reconstitution Program for Cooper Nuclear Station, a potential single failure vulnerability in the Standby Gas Treatment (SGT) System was identified. The potential single failure vulnerability identified is associated with a single inlet damper in the common supply duct from the Reactor Building exhaust plenum for both trains of the SGT System. A failure of this damper to open could prevent both trains of the SGT System from performing the required safety function of maintaining the Secondary Containment at a negative pressure. This damper is designed to fail open on loss of power or loss of control air. The fail open feature is accomplished using the stored energy of a spring. Failure of this single damper in the closed position would prevent the SGT System from filtering and venting contaminated effluents through the elevated release point, and cause a possible unmonitored ground level release of radioactive material following a design basis loss of coolant or fuel handling accident.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1): Cooper Nuclear Station	DOCKET NUMBER (2): 0 5 0 0 0 2 9 8 9 3	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

A. Event Description

During the ongoing Design Basis Reconstitution Program for Cooper Nuclear Station, a single failure vulnerability was identified in the Standby Gas Treatment (SGT) System. An air operated inlet damper is located in the common supply line from the Reactor Building exhaust plenum to both trains of the SGT System filter units. A failure of this damper in the closed position could prevent both trains of the SGT System from processing effluents from Secondary Containment following a design basis loss of coolant or fuel handling accident. On April 30, 1993, at approximately 11:30 am, this discrepancy was determined to be reportable. The plant was shut down and defueled, and no fuel handling was taking place at the time. Therefore, Secondary Containment was not required to be intact and the SGT System was not required to be operable in accordance with Technical Specifications 3.7.B and 3.7.C.

B. Plant Status

Shutdown for the 1993 Refueling Outage, with the reactor defueled, and no fuel handling in progress.

C. Basis for Report

A condition alone that could have prevented the fulfillment of a safety function of systems needed to mitigate the consequences of an accident, reportable in accordance with 10 CFR 50.73(a)(2)(v).

D. Cause

This condition was a part of the original Cooper Nuclear Station design. At the time of original design and licensing, the fail open design of this damper may have been considered acceptable from a single failure perspective. The damper automatically fails to the open position on a loss of control air or electric power, by the use of spring force. However, using the current criteria for evaluation of compliance with single failure requirements, this damper is considered to be an active component, subject to a possible single active failure.

E. Safety Significance

The Secondary Containment is designed to limit infiltration to less than the flow capacity of the SGT System, thus maintaining the Secondary Containment at a negative pressure relative to the outside atmosphere, so that fission products released to the Secondary Containment following an accident will be filtered and released through the elevated release point. The safety objective of the SGT System is to process effluent from the Reactor Building (Secondary Containment) when required, thus limiting the discharge of radioactive materials to the environment. Each train of the SGT System is designed to maintain the Secondary Containment at a slightly negative pressure relative to atmosphere and to filter exhaust before releasing it through the elevated release point.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

E. Safety Significance - (continued)

The unlikely failure of the inlet damper to open in the common supply from the Reactor Building exhaust plenum to both SGT System filter units could have prevented the system from accomplishing its safety function. In the event of a loss of coolant accident or a fuel handling accident, this single failure could have possibly prevented the SGT System from maintaining the Secondary Containment at a negative pressure and filtering and processing the release through the elevated release point. This would allow the unmonitored release of radioactive material, following a postulated accident, to be at ground level, which would increase expected exposure rates.

The inlet damper in question receives an automatic open signal on high radiation in the Reactor Building exhaust plenum, low reactor water level or high drywell pressure. In addition, on a loss of electric power or air to the air operator, the damper fails to the open position by means of spring force.

F. Safety Implications

The failure of the inlet damper in the common supply line from the Reactor Building exhaust plenum to both trains of the SGT System would have no effect on the safety of the plant, unless the damper failed when the SGT System was required to operate following a loss of coolant accident or a fuel handling accident. The likelihood of this damper failing, with its fail safe design, when the SGT System is required to process effluents from the Secondary Containment due to an accident is remote. Therefore, the safety implications are minimal.

G. Corrective Action

At the time that this condition was discovered, the plant was in a refueling outage with the reactor defueled and no fuel handling in progress. Under these conditions, neither the Secondary Containment nor the SGT System is required to be operable per Technical Specifications. Prior to moving fuel, or moving any load that could have affected the fuel, the inlet damper was sealed open, eliminating the single failure vulnerability. Prior to startup from the refueling outage, an evaluation will be conducted and appropriate action taken to permanently eliminate this single failure vulnerability in the SGT System.

H. Similar Events

None