NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Cooper Nuclear Station	0 5 0 0 0 2 9 8	1 OF 0 3

TITLE (4)
Inoperable Standby Gas Treatment System

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)
0 4	1 9	8 4	8 4	0 0 7	0 0	0 5	1 8	8 4		0 5 0 0 0
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OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 7 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	X 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Gene Mace, Plant Engineering Supervisor	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	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
A											

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) (16)

While scheduled construction work was in progress, a bulldozer inadvertently sheared a hydrant from the Fire Protection System within the Cooper Nuclear Station restricted security area. The station fire pumps automatically started, but were later temporarily secured while the hydrant was being isolated from the system. At this point, the Fire Protection System header pressure had dropped from 140 psig to approximately 10 psig. After the hydrant was isolated, the Fire Protection System was repressurized by using the electric fire pump. Starting of the electric fire pump caused a pressure surge which resulted in a system water hammer. This water hammer forced open the clappers on the SBGTS automatic deluge valves which flooded the charcoal filters on the SBGTS trains, rendering both trains inoperable. This placed the plant in a Technical Specification LCO requiring cold shutdown. The reactor was placed in a cold shutdown condition until the inoperable SBGT trains were made operable.

Lack of attention paid by the bulldozer operator to his working environment, and the failure of the control room operators to restore system pressure gradually, were personnel errors which were identified.

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

On April 19, 1984 at approximately 1015, with reactor power at approximately 70%, a construction worker backed a bulldozer over a fire hydrant within the Cooper Nuclear Station restricted security area, causing a leak in the Fire Protection System. The Fire Protection System pressure dropped and both fire pumps started automatically, sounding an alarm in the control room. Operators investigating the alarm found the hydrant sheared off and reported the event to the control room. At the direction of the Operations Supervisor, all fire pumps in service were secured until the fire hydrant could be isolated. At approximately 1025, the fire hydrant was isolated. The Fire Protection System pressure had stabilized at approximately 10 psig.

With the Fire Protection System jockey pump running, the system flushing pump was started in order to increase the rate of header repressurization. Later, the electric driven fire pump was also started to further aid in header repressurization. Starting of the electric driven pump resulted in a significant pressure surge. This pressure surge created a system water hammer which forced open the Standby Gas Treatment System (SBGTS) deluge valve clappers, without tripping the automatic actuation alarm. At 1034, the Shift Supervisor was informed by the control room personnel that the high moisture alarm had actuated in both trains of the SBGT system. The Operations Supervisor and the Shift Supervisor inspected the SBGTS and found water leaking from the housings of both trains. At about 1035, both trains were declared inoperable, thus placing the plant in a Limiting Condition of Operation (LCO).

At 1100, procedures were initiated for normal plant shutdown and reactor power reduction was commenced. Having entered a Technical Specification LCO requiring plant shutdown, the Shift Supervisor assumed the duty of Emergency Director and declared a Notification of Unusual Event at 1140. The basis for these actions is that wetting of the charcoal filters in both trains of the SBGTS removed the iodine adsorbing capability of the charcoal which prevented the SBGTS from performing its intended safety function.

At 1400, with reactor power at approximately 34%, the reactor was manually scrammed. Hot shutdown conditions were established and an orderly cooldown of the reactor was commenced to place the reactor in cold shutdown. At 2215, the Shutdown Cooling Mode of the Residual Heat Removal System was placed in service and, by approximately 2315, reactor coolant temperature was less than 212°F. At 2324, the vessel head vents were opened, establishing cold shutdown conditions. Thus, as required by Technical Specifications, plant conditions were established which did not require the SBGTS to be operable.

Immediately after declaring the SBGTS inoperable, steps were taken to acquire new charcoal filters to replace the damaged sets. The new charcoal filters arrived Friday, April 20, 1984 at 1200. Diocryl phthalate (DOP) and freon tests were completed at 1800, and the system was returned to an operable condition. The SBGTS was inoperable for a total of 31½ hours.

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

The deluge valve clappers were disassembled, examined and found to have excessive wear on the latch tabs. This would reduce the force necessary to push the clapper past the latch assembly without tripping it. The clappers were replaced and it was decided to maintain the deluge system in an isolated condition. In the event of a fire in the SBGTS, station operating procedures direct an operator to manually open the deluge system isolation valve.

The Cooper Nuclear Station Fire Protection System utilizes one electric and one diesel driven pump in parallel, each rated at 3,000 GPM. A small capacity jockey pump maintains header pressure at approximately 120 psig to 140 psig. When header pressure drops to 110 psig, the electric driven pump will automatically start. If header pressure continues to drop to 105 psig, the diesel driven pump will automatically start.

To avoid the water hammer transient, the main fire pumps should not have been placed into service after the hydrant was isolated. Instead, the Fire Protection System jockey pump alone should have been utilized to restore the system pressure at a gradual rate.

There were no adverse consequences or safety hazards to the public as a result of this event. This event is not repetitive and was judged not to relate to a generic problem.

Nebraska Public Power District

COOPER NUCLEAR STATION
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CNSS840203

May 18, 1984

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

Dear Sir:

Cooper Nuclear Station Licensee Event Report 84-007 is forwarded as an attachment to this letter.

Sincerely,

P. V. Thomason

P. V. Thomason
Division Manager of
Nuclear Operations

PVT:lb
Attach.
cc: J. T. Collins
L. G. Kuncl
L. R. Berry
INPO Records Center

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