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19-831 LICENSEE EVENT	UI	U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104 EXPIRES 8/31/85								
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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 (DO?) and freon tests were completed at 1800, and the system was returned to an operable condition. The SBGTS was inoperable for a total of  $31\frac{1}{2}$  hours.

NRC Form 366A 19-837	LICENSEE EVENT	U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104 EXPIRES. 8/31/85				
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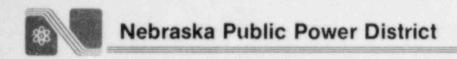
The deluge valve clappers were disassembled, examined and found to have excessive wear on the latch tabs. This would reduce the force necessary to push the clapper past the latch assembly without tripping it. The clappers were replaced and it was decided to maintain the deluge system in an isolated condition. In the event of a fire in the SBGTS, station operating procedures direct an operator to manually open the deluge system isolation valve.

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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.



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

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,

G.V. Thomason

P. V. Thomason Division Manager of Nuclear Operations

PVT:1b Attach. cc: J. T. Collins L. G. Kuncl L. R. Berry INPO Records Center

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