Nebraska Public Power District

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

CNSS790510

September 28, 1979

Mr. K. V. Seyfrit
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region IV
611 Ryan Plaza
Suite 1000
Arlington, Texas 76011

Dear Sir:

This report is submitted in accordance with Section 6.7.2.B.2 of the Technical Specifications for Cooper Nuclear Station and discusses a reportable occurrence that was discovered on September 12, 1979. A licensee event report form is also enclosed.

Report No.: 50-298-79-25
Report Date: September 28, 1979
Occurrence Date: September 12, 1979
Facility: Cooper Nuclear Station
Brownville, Nebraska 68321

Identification of Occurrence:
A condition which resulted in operation in a degraded mode permitted by the limiting condition for operation established in Section 3.5.C.2 of the Technical Specifications.

Conditions Prior to Occurrence:
The reactor was on a flow ramp at approximately 93% of rated thermal power.

Description of Occurrence:
During routine surveillance testing of the High Pressure Coolant Injection System (HPCI) it was found that the HPCI turbine stop valve stem was disconnected from the stop valve actuator at the split coupling.

Designation of Apparent Cause of Occurrence:
Improper installation of the split coupling connecting the stop valve stem and the stop valve actuator stem.

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Analysis of Occurrence:

The HPCI turbine stop valve is a vertically mounted hydraulically operated piston type globe valve. The function of this valve is to close quickly and stop the flow of steam to the turbine when required for turbine protection.

The valve stem and actuator stem are connected by a split coupling. Following maintenance on the hydraulic actuator on August 13, 1979, the split coupling was improperly re-installed with excessive thread clearance. It was found that the threads on the split coupling were stripped allowing the stop valve stem to pull free from the coupling. The subject split coupling had been previously rebuilt and it is believed that the thread clearance between the stop valve stem and coupling was excessive, allowing a loose fit and minimal thread surface contact. Therefore when the stop valve and actuator went to a closed position and the split coupling and stop valve stem were in tension, the threads failed and allowed the stop valve stem to come out of the split coupling. With the stop valve stem out of the split coupling the effective length of the valve stem was extended approximately 3/4". During the subsequent opening of the stop valve, the valve stem extension caused the balance piston which is attached to the top of the stop valve to over travel in the cylinder and become jammed due to mechanical interference.

With the stop valve stuck in the open position the HPCI system would have performed its intended safety function. At the time of the occurrence the redundant system, Automatic Depressurization System, as well as the Reactor Core Isolation Cooling and the Low Pressure Injection Systems were operable. This occurrence had no adverse affects on the public health and safety.

Corrective Action:

The split coupling was replaced. The new coupling was installed as per supplier's recommendations. The stop valve was stroked and a functional test of the HPCI system was satisfactorily performed before the system was returned to service. Additional instructions have been placed in the HPCI turbine manuals at Cooper Station to define split coupling installation.

Sincerely,

L. C. Lessor
Station Superintendent
Cooper Nuclear Station

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Attach.