

Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 48, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402) 825-3311

CNSS810004

January 13, 1981

Mr. K. V. Seyfrit, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region IV
611 Ryan Plaza Drive
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 December 16, 1980. In accordance with the requirements of IE Bulletin 80-17, Mr. Spangler was notified when he arrived on site that day. A licensee event report form is also enclosed.

Report No.: 50-298-80-51
Report Date: January 13, 1981
Occurrence Date: December 16, 1980
Facility: Cooper Nuclear Station
Brownville, Nebraska 68321

Identification of Occurrence:

A condition occurred 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 operating at a steady state power level of 100% of rated thermal power.

Description of Occurrence:

During surveillance testing of the HPCI system the turbine stop valve failed to open.

Designation of Apparent Cause of Occurrence:

Excess teflon seal material called "Shef Seal" by Miller Fluid Power, became lodged in the relay valve on the hydraulic actuator and stopped this valve from functioning properly. This prevented the stop valve from opening.

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Analysis of Occurrence:

The HPCI turbine stop valve is a vertically mounted, hydraulically operated piston type globe valve with the actuating cylinder on the bottom. In the actuator, oil is supplied to the hydraulic cylinder from the relay valve directly beneath it. During the opening operation of the actuator, oil pressure will shift the relay valve piston to close the oil drain opening in the relay valve body and then provide open passage for the main oil supply to the hydraulic cylinder.

During routine surveillance testing of the HPCI system, operations personnel discovered that the turbine stop valve would not open against reactor pressure. The system was declared inoperable at 1200 hours. Investigation of the problem revealed that gasket material ("Shef Seal" Miller Fluid Power part number 110-ES006-1200) used in the hydraulic cylinder tube end seals was interfering with relay valve operation. The teflon gasket material was lodged in the seat of the relay valve such that when the relay valve piston shifted position it could not seat properly to seal the valve drain. The oil leakage past the seat was great enough to prevent sufficient pressure build-up to raise the hydraulic cylinder piston and open the stop valve. The gasket had been replaced during maintenance in the spring 1980 refueling outage.

The HPCI system was inoperable for 7.2 hours. During this time, the redundant system, ADS, was available and operable, as was RCIC and the low pressure injection systems with the exception of the B-loop of LPCI which was inoperable for 2.8 hours during the HPCI outage. Shutdown plans were initiated and the NRC notified as per IE Information Notice 80-06 and 10CFR50.72. The shutdown was terminated when LPCI was made operable. This occurrence had no adverse affect on the public health and safety.

Corrective Action:

The excess gasket material was removed. The system was tested and performed satisfactorily. The seal design is being reviewed with the NSSS supplier and the original equipment vendor to determine if the current design is proper for this application. Based upon this review, a decision will be made as to whether the "Shef Seal" gasket material should be replaced with another type of gasket material during the next refueling outage.

Sincerely,

L. C. Lessor
Station Superintendent
Cooper Nuclear Station

LCL:cg
Attach.