

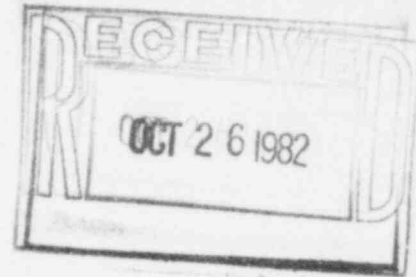


Nebraska Public Power District

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

CNSS820591

October 20, 1982



Mr. John T. Collins, Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76011

Dear Sir:

This amended 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 February 21, 1982. An amended licensee event report form is also enclosed.

Report No.: 50-298-82-05-01
Report Date: October 20, 1982
Occurrence Date: February 21, 1982
Facility: Cooper Nuclear Station
Brownville, Nebraska 68321

Identification of Occurrence:

Condition leading to operation in a degraded mode permitted by a limiting condition for operation as delineated in Section 3.7.D of the Technical Specifications.

Conditions Prior to Occurrence:

The reactor was operating at a steady state power level of approximately 45% of rated thermal power.

Description of Apparent Cause of Occurrence:

While performing routine Surveillance Testing Procedure 6.3.9.4, MSIV-86A was found to have a closing time faster than allowed by Technical Specifications.

Designation of Apparent Cause of Occurrence:

The apparent cause of the occurrence is a loss of nitrogen preload pressure and a small loss of fluid from the hydraulic actuator which allowed the valve to operate more quickly.

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Analysis of Occurrence:

At least once per quarter, with reactor thermal power less than 75%, the main steam isolation valves are tripped individually and closure time verified. The Technical Specification closure time limit, T, must be greater than 3 seconds and less than 5 seconds. This setting is slow enough to prevent a more severe transient on the nuclear system than closure of the turbine stop valves with failure of the bypass valves but fast enough to prevent fuel barrier damage by limiting the loss of reactor coolant.

MSIV-86A closing time was 2.9 seconds. It is one of eight main steam isolation valves in the main steam system. There are two valves providing redundant protection on each main steam line. With the initiation of an isolation signal, both valves would go shut, isolating the steam line. The redundant valve's time was satisfactory.

Later, during the refueling outage (June-July 1982) following this occurrence the vendor representative provided information on the operation of the hydraulic actuator. The hydraulic portion of the valve contains an accumulator charged with nitrogen which acts as a buffer to allow for thermal transients in the hydraulic fluid. The nitrogen preload is set between 50 psig and 60 psig. Occasionally a small amount of hydraulic fluid leaks past the piston seal which also allows the nitrogen charge to bleed off. Since the hydraulic system aids in speed control of the MSIV, any small loss of fluid allows the valve to initially react more quickly. After the valve has moved a short distance the hydraulic fluid then begins to compress and slow the valve down. This short-term initial increase in speed however can cause the three second Technical Specification to be exceeded.

This occurrence presented no adverse consequence from the standpoint of public health and safety.

Corrective Action:

The manufacturer of the hydraulic dashpot was initially contacted and it was learned that each control valve has a set screw that can be used to lock the control valve into its set position. In March 1982, all MSIV dashpot control valves had the set screws locked in place except MSIV-80B and 80C which were not equipped with set screws until the May-July 1982 refueling outage. The use of the set screws has been incorporated into CNS procedures.

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In July 1982, MSIV-86A hydraulic system accumulator was recharged. The valve closing speed was adjusted, Surveillance Procedure 6.3.9.4 was performed, and MSIV-86A was found to have an acceptable closing speed of 4.2 seconds. This closing speed has been checked on two subsequent occasions and the closing time has varied from 4.3-4.2 seconds which is essentially stable. Any hydraulic fluid leakage may be monitored from a vent port in the 24 inch cylinder head.

The accumulator charging procedure is being incorporated into CNS maintenance procedures. The CNS preventative maintenance schedule will also be revised to include an annual test of the hydraulic accumulator pressure. These actions will be completed before the next refueling outage.

Sincerely,



L. C. Lessor
Station Superintendent
Cooper Nuclear Station

LCL:cg
Attach.