

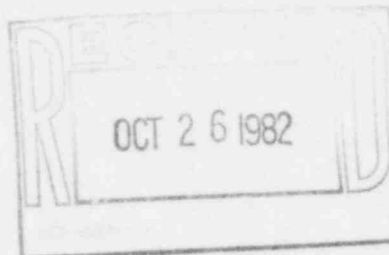


Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402) 625-3811

CNSS820598

October 22, 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 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 October 4, 1982. A licensee event report form is also enclosed.

Report No.: 50-298-82-20
Report Date: October 22, 1982
Occurrence Date: October 4, 1982
Facility: Cooper Nuclear Station
Brownville, Nebraska 68321

Identification of Occurrence:

A condition which resulted in operation in a degraded mode permitted by a limiting condition for operation established in Section 3.9.B.3 of the Technical Specifications.

Conditions Prior to Occurrence:

The reactor was at a steady state power level of approximately 96% of rated thermal power.

Description of Occurrence:

During performance of Surveillance Procedure 6.3.12.1, #2 Diesel Generator (DG) tripped with no attendant alarm. Inspection revealed water in the lube oil system and #2 DG was declared inoperable.

Designation of Apparent Cause of Occurrence:

Rupture of #8 left cylinder liner expansion seal was the source of water in the lube oil system.

Analysis of Occurrence:

The station's emergency power system consists of two emergency diesel generators, each capable of supplying power for post accident safety system operation and safe reactor cooldown.

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During an operability test, #2 DG shut down with no attendant alarms. An air fitting leak was found at the 80 psig port "A" of the Amot safety trip valve in the control air system. The fitting was repaired but the diesel would not start on subsequent trials and #2 DG was declared inoperable.

Further examination found a high oil level and water in the lube oil system which was traced to a rupture of #8 left cylinder liner expansion seal. Splashing due to the high crankcase level had tripped several vent valve trip levers associated with the connecting rod bearing temperature detectors. This allowed 30 psig control air to vent off and trip the diesel.

The metal expansion seal provides the lower water jacket seal between the liner and engine main frame. The seal expands and contracts with engine temperature variations.

The high bearing temperature vent valve trip levers are normally activated by a spring loaded fuse rod which strikes the trip lever on a high bearing temperature which releases the control air pressure. The fuse rods were not activated and no attendant alarm with the DG shutdown sounded.

During this event the redundant Diesel Generator, normal, startup and emergency transformers were operable. This occurrence presented no adverse consequences to the public health and safety.

Corrective Action:

The #8 left liner expansion seal was replaced. No. 1 left liner expansion seal was also replaced after inspection revealed several dents in the bellows. The lube oil system was completely drained and cleaned. Various portions of the DG annual inspection were performed to ensure no damage was done to any bearings or cylinders due to lube oil delusion. This included a boroscope inspection of all power cylinders, a crankcase inspection of all cylinders and liners, crank shaft web deflection readings and jacking clearances of all rod bearings. The DG was tested satisfactorily and returned to service on October 7, 1982.

The ruptured liner expansion seal will be returned to Cooper Energy Services for inspection. Our conversation with Cooper Energy Services reveals there have been other failures with other engines, but the failure rate was not excessive.

Sincerely,



L. C. Lessor
Station Superintendent
Cooper Nuclear Station

LCL:cg
Attach.