

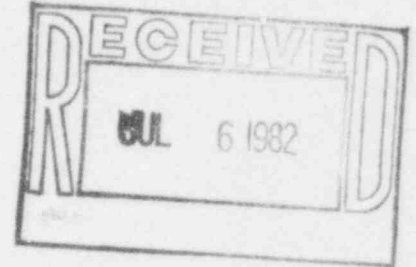


Nebraska Public Power District

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

CNSS820394

June 30, 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.4 of the Technical Specifications for Cooper Nuclear Station and discusses a reportable occurrence that was discovered on June 7, 1982. A licensee event report form is also enclosed.

Report No.: 50-298-82-14  
Report Date: June 30, 1982  
Occurrence Date: June 7, 1982  
Facility: Cooper Nuclear Station  
Brownville, Nebraska 68321

Identification of Occurrence:

A condition was discovered which indicated an abnormal degradation of the Class IN Reactor Water Clean-up (RWCU) System pressure boundary inside primary containment.

Conditions Prior to Occurrence:

The reactor was in the refueling mode of operation.

Description of Occurrence:

During the scheduled replacement of RWCU-MO-15, a six inch 900 pound Anchor Darling gate valve, rejectable indications were detected in the heat affected zones (HAZ) of welds BJ-20 and 23 (reference CNS ISI Drawing #3). The indications were detected by liquid penetrant examination on the inside diameter of welds BJ-20 and 23 near the valve. Subsequent examination of the balance of six inch welds on the RWCU line also produced rejectable indications in welds BJ-13 and 15. The rejectable indications in welds BJ-13 and 15 were detected by ultrasonic (UT) examination.

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Designation of Apparent Cause of Occurrence:

The mode of failure in welds BJ-20 and 23 is presently unknown, however these welds will be analyzed to determine the failure mechanism(s). The cause of the indications in BJ-13 and 15 is attributed to improper fabrication techniques. The rejectable transverse indication in weld BJ-13 was present on the original construction radiograph while weld BJ-15 was rejectable due to lack of fusion in the weld joint.

Analysis of Occurrence:

The RWCU System provides a means of purifying the primary coolant water by continuously removing a portion of the Reactor Recirculation (RR) System flow from RR "A" Loop via a 20" Residual Heat Removal (RHR) System suction line.

BJ-20 had a circumferential indication in its HAZ. Two transverse indications were present in the HAZ of BJ-23. There is speculation that these indications are Intergranular Stress Corrosion Cracking (IGSCC) however, no IGSCC has been experienced to date at this station. The rejectable indications in the HAZ's of welds BJ-20 and 23 will be analyzed to determine the failure mode.

The transverse indication in BJ-13 and the lack of fusion in weld BJ-15 can be attributed to improper fabrication techniques and are not considered service induced. These indications were either not detected or not considered rejectable during plant construction. Today's improved testing techniques can detect flaws previously unnoticed during plant construction. Although these welds had rejectable flaws, their strength would have been sufficient to last the designed 40 years.

One hundred percent of accessible six inch welds from the upstream weld on the outboard isolation valve (RWCU-MO-18) to the attachment weld on the 20" RHR suction line were examined with UT. The UT procedure used was the same procedure that is used to detect IGSCC. If the rejectable indications had gone unnoticed at this time, they would probably have been detected by yearly ISI examinations. Had the indications degraded to the point of leakage, they would have been detected by drywell floor drain sump monitoring and radiation monitors.

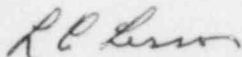
The reactor was in the refueling mode of operation when this event was discovered. This occurrence presented no adverse consequences concerning public health and safety.

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Corrective Action:

The piping and fittings affected by the rejectable welds were replaced. The pipe was replaced by material identical to that used in construction. Fittings used were Type 304L, low carbon nuclear grade fittings rather than the Type 304 fittings used in construction. This report will be updated if the cause of the indications is determined to be IGSCC.

Sincerely,



L. C. Lessor  
Station Superintendent  
Cooper Nuclear Station

LCL:cg  
Attach.