



Nebraska Public Power District

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February 18, 1992

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Gentlemen:

Subject: Report of Defect in Accordance with 10CFR21
Cooper Nuclear Station
NRC Docket No. 50-298, DPR-46

Attached please find a report submitted in accordance with 10CFR21.21(c)(1). This report details defects in AMOT safety trip valves supplied to the Nebraska Public Power District's Cooper Nuclear Station for use in each of the Emergency Diesel Generators.

Should you have any questions or concerns regarding the enclosed report, please contact me.

Sincerely,

G. R. Horn
Nuclear Power Group Manager

/rg
Attachment

cc: NRC Regional Administrator
USNRC - Region IV

Cooper Bessemer Reciprocating Group

AMOT Control Corporation

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Handwritten initials/signature

10CFR21 Report

Defects in AMOT Safety Trip Valves

Two AMOT safety trip valves, supplied by AMOT Control Corporation, for use in each of the Cooper Nuclear Station (CNS) Emergency Diesel Generators, as mechanical overspeed devices, have been identified as containing defects. One unit was installed, and was subsequently removed upon its failure while troubleshooting engine operation. The other unit was procured under the same purchase order and was not installed at the time the defect was discovered. The identified defects could have created a substantial safety hazard, if the AMOT valve installed in Emergency Diesel Generator 1 (DG1) had failed along with a single failure of DG2. The following information is provided pursuant to the requirements of 10CFR21.21(c)(4).

1. 10CFR21.21(c)(4)(i) Name and address of the individual or individuals informing the Commission:

Guy. R. Horn
Nuclear Power Group Manager
Nebraska Public Power District
P. O. Box 499
Columbus, NE 68602-0499

2. 10CFR21.21(c)(4)(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Basic Component Containing Defect - Safety trip valve for the
Emergency Diesel Generators

Facility Supplied to - Cooper Nuclear Station

3. 10CFR21.21(c)(4)(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contain a defect.

Supplier: Cooper Energy Services
Cooper Bessemer Reciprocating Group
150 Lincoln Ave.
Grove City, PA 16127

Manufacturer: AMOT Control Corporation
P.O. Box 1312
Richmond, CA 94802

4. 10CFR21.21(c)(4)(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

On October 25, 1991, the AMOT overspeed trip valve, DG-SV-DG1 was replaced with a new AMOT valve (Model 1476B/0212A3). Four days later, on October 29, 1991, this new AMOT control valve was removed from DG-1, due to confirmed binding in the lifting spring/loading spring/piston area. The binding was not allowing this assembly to function properly during the resetting phase of the operation. Visual inspections of the piston identified some markings similar to adhesive wear. There was no evidence of internal lubrication of the moving components. Discussions with the manufacturer indicated that the lower cylinder assembly of the valve should have been lubricated during the manufacturing and assembly process. The lack of lubrication in the valves as supplied to Cooper Nuclear Station indicates the lubrication was apparently missed in the assembly process. An identical valve, procured under the same purchase order, showed indications of the potential for developing the same problems if put in service.

The safety impact of these components not working is that if the component failed while in service, the diesel generators would not have started or operated as designed. The loss of both diesel generators could have occurred if the AMOT valve installed in DG1 would have failed in addition to the single failure of DG2 postulated for accident scenarios. This potential for the loss of both emergency diesel generators is considered to be a substantial safety hazard.

5. 10CFR21.21(c)(4)(v) The date on which the information of such defect or failure to comply was obtained.

February 17, 1992

6. 10CFR21.21(c)(4)(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part.

Two units total - One unit was initially installed on DG1, and was subsequently removed from service. Both units are under the control of the Nebraska Public Power District.

7. 10CFR21.21(c)(4)(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the actions; and the length of time that has been or will be taken to complete the action.

Corrective Action - The defective AMOT overspeed trip valve was removed from DG1. Its replacement, and the existing AMOT overspeed trip valve on DG2, have been inspected and determined to not contain this identified defect. Contact was made with the manufacturer in determining the cause of failure. CNS is aware of only one other station, Zion, which uses a trip system similar to this.

Information regarding this defect was provided to Zion station personnel at the Cooper Bessemer Owners Group meeting.

Responsible Organization - Nebraska Public Power District

Length of Time to Complete - All corrective actions regarding the identification and root cause determination of the above identified defect have been completed. This effort took approximately 60 man-hours.

8. 10CFR21.21(c)(4)(viii) Any advice related to the defect or failure to comply about the facility, activity or basic component that has been, is being, or will be given to purchasers or licensees.

Not applicable. The supplier and manufacturer have been informed through previous correspondence and will be further advised of the District's evaluation by copy of this notification.