Consumers Power Company

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82-01 #1

February 4, 1982

Mr J G Keppler, Regional Administrator
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND PROJECT -
DOCKET NOS 50-329 AND 50-330
MAIN STEAM ISOLATION VALVES
FILE: 0.4.9.57 SERIAL: 14683

This letter is an interim 50.55(e) report concerning deficiencies in electrical components associated with main steam isolation valve actuators, logic cabinets and control panel inserts. This condition was reported January 5 to R C Knop of NRC Region III.

Attachments 1 and 2 provide a description of the deficiencies and the status of the planned corrective actions.

Another report, either interim or final, will be sent on or before April 1, 1982.

James W. Cook

WRB/lr

CC: Document Control Desk, NRC
Washington, DC (1)

RJCook, NRC Resident Inspector
Midland Nuclear Plant (1)

Attachments: (1) Bechtel Management Corrective Action Report MCAR-1, Report No 55, dated January 15, 1982

(2) Bechtel MCAR-55, Interim Report 1, dated January 26, 1982

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IE 27

CC: CBechhoefer, ASLB Panel
RSDecker, ASLB Panel
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QUALITY ASSURANCE PROGRAM
MANAGEMENT CORRECTIVE ACTION REPORT
MCAR-1

REPORT NO.: 55

JOB NO.: 7220 Q NO.: DATE: January 15, 1982

I **DESCRIPTION*** (Including References):
Main Steam Isolation Valves (MSIVs) were supplied by Fluid Systems Division (FSD) of Gulf & Western Manufacturing Company under Purchase Order 7220-M-118A(Q) issued 8/22/74. The design for the electrical components associated with these valves does not appear to conform to the channel separation criteria in Reg. Guide 1.75 to the extent required by the FSAR; also, satisfactory seismic qualification reports have not been submitted for these electrical components. The electrical components of concern associated with the MSIV were identified as follows: (continued)

RECOMMENDED ACTION* (Optional):
1) Take the appropriate corrective action to make the design and the hardware conform to the requirements of Regulatory Guide 1.75 and IEEE standard as committed in FSAR.
2) Obtain the required equipment seismic qualifications.
3) Add the above mentioned Class 1E electrical components associated with the MSIVs to the Qualification Test Status Report (QTSR) as outstanding items to be qualified. (continued)

REFERRED TO: ☒ Engineering ☐ Construction ☐ QA Management ☐ _____
☐ Procurement

ISSUED BY: D.M. Reis for Project QA Engineer 1/15/82 Date

II **REPORTABLE DEFICIENCY:** Potentially Reportable

☐ NO ☒ YES

NOTIFIED CLIENT: January 6, 1982 Date

Project Manager 1/15/82 Date

III **CAUSE:**

CORRECTIVE ACTION TAKEN:

AUTHORIZED BY: _____ Date

AAPD DISTRIBUTION	PROJ DISTRIBUTION	OTHER DISTRIBUTION
MGR OF CONSTRUCTION	CHIEF CONSTR QC ENGR	MGR OF QA - TPO
MGR OF ENGINEERING	CLIENT	GPD - QA MGR
MGR OF PROCUREMENT	PFQCE	LAPD - QA MGR
MGR OF PROJ OPERATIONS	PROJECT CONSTR MGR	SFPD - QA MGR
MGR OF QUALITY ASSURANCE	PROJECT ENGINEER	
CONSTRUCTION MGR	PROJECT MGR	
ENGINEERING MGR	PROJ PROCUREMENT MGR	
SUPPLIER QUALITY MGR	SITE MGR	
QE SUPERVISOR		

FORMAL REPORT TO CLIENT (If Section II Applies) _____ Date

CORRECTIVE ACTION IMPLEMENTED

VERIFIED BY _____ Project QA Engineer Date

*Describe in space provided and attach reference document.

I. DESCRIPTION (continued)

1) Actuator, limit switches and wiring
2) Actuator terminal box and conduits
3) Safety-related actuator solenoid valve
4) All components and wiring of the logic cabinets and control panel inserts, except for the pressure transducer digital readout.

Appendix A1 to Specification 7220-M118A(Q), Para 1.19.20 states:

> The equipment included in this specification shall be designed, built, tested, and shall conform in accordance with the latest applicable AGMA, ANSI, ASTM, IEEE, and NEMA Standards.

RECOMMENDED ACTION (continued)

4) Determine why qualification for the electrical components was not detected by MCAR 25 re-review. Add to the QTSR any other deficiencies pertinent to equipment qualification identified on NCRs.
5) Engineering shall determine what other purchases this specification or similar valve specifications for electrically operated Q-listed valves were used in which associated electrical components were purchased with the valves. Engineering shall review the identified purchases to ensure that the seismic qualification documentation and electrical separation requirements satisfy the FSAR commitments, and take appropriate corrective action as required.
6) In order to preclude recurrence, Engineering shall determine, identify and define the root cause of this problem.
7) Engineering to issue interim report by January 26, 1982.

SUBJECT: MCAR 55 (Issued 1/15/82)

Deficiencies in Electrical Components Associated with MSIV Actuators, Logic Cabinets, and Control Panel Inserts

INTERIM REPORT 1

DATE: January 26, 1982

PROJECT: Consumers Power Company
Midland Plant Units 1 and 2
Bechtel Job 7220

Description of Discrepancy

Main steam isolation valves (MSIVs) and actuators were supplied by Energy Products Group (EPG), a division of Gulf and Western Manufacturing Company, under Purchase Order 7220-M-118A(Q). The logic cabinets and control panel inserts were vendor supplied units not covered in detail by the valve specification, and are currently off-the-shelf commercial grade items without seismic qualification. Recent review of the MSIV actuator design and accessories also revealed that certain components of the hydraulic actuator, that must operate in order for the MSIV to perform its safety function, may not be in accordance with the applicable IEEE standards and Regulatory Guide 1.75 requirements. Bechtel became aware of possible inadequacies in the MSIVs by Consumers Power Company Nonconformance Report M-01-9-0-064, and an unsolicited proposal for modification from EPG dated April 1, 1980, and a review of environmental qualification data.

The major safety-related electrical components of the MSIV system are the actuators, the logic cabinets, and the control panel inserts. Details of the potential nonconformances and deficiencies currently identified are as follows:

A. Actuator

1. It is not certain if the separation criteria of Regulatory Guide 1.75 was achieved as physical inspection for separation has not yet occurred.

2. It is not certain that the essential electrical components listed below were designed and procured by EPG as Class 1E and in accordance with a quality assurance program meeting the requirements of 10 CFR 50 Appendix B or ANSI N45.2.

   a. Trip solenoids and wiring
   b. Trip solenoid valves
   c. Limit switches
   d. Position switches for the solenoid valves

B. Logic Cabinets

1. Existing documentation does not substantiate that the cabinets are seismically qualified.

2. The separation criteria of Regulatory Guide 1.75 was not achieved.

3. It is not certain that essential electrical components were designed and procured by EPG as Class 1E and in accordance with a quality assurance program meeting the requirements of 10 CFR 50 Appendix B or ANSI N45.2.

C. Control Panel Inserts

1. Existing documentation does not substantiate that the panel inserts are seismically qualified.

2. The separation criteria of Regulatory Guide 1.75 was not achieved.

3. It is not certain that essential electrical components were designed and procured by EPG as Class 1E and in accordance with a quality assurance program meeting the requirements of 10 CFR 50 Appendix B or ANSI N45.2.

Potential Safety Problem

The safety function of the actuator and associated electrical components is to provide emergency closure of the MSIV upon receipt of either a Channel A or Channel B main steam line isolation signal (MSLIS). All electrical components that are required for transmission of the MSLIS, tripping the latch mechanism, closing the valve, and maintaining tight shut-off, must be capable of performing the safety function during or after a seismic event. A potential safety problem exists if failure of any of the components results in failure of the MSIV to perform its safety function as described in the FSAR.

Investigation/Corrective Action

The following actions have been initiated or completed to resolve this situation.

1. The probable cause of the problem has been identified. The original MSIV design specification was prepared with the intention of purchasing only valves and power operators. Logic cabinets and control panel inserts were not contemplated when the original specifications were prepared and issued for bid; and therefore, design requirements and criteria for such items were not included in the technical specification. However, EPG offered the panel inserts and logic cabinets in their proposal as additional items as an incentive to market their unique and innovative ball valve design for MSIV service.

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2. Action is being initiated to either confirm or modify the design and the hardware to conform to the requirements of the applicable regulatory guides and IEEE standards. Components requiring Class 1E and seismic qualification have been identified. A specification addenda that includes the applicable IEEE standards and regulatory guides is in internal review. When the full scope of work has been established, action to implement will be taken.

3. The electrical components that are determined to require qualification will be added to the qualification open action summary (QOAS) as outstanding items which require qualification prior to plant completion.

4. Response to this corrective action will be addressed in the next report.

5. Electric-hydraulic operators were purchased on 7220-M-118B for feedwater isolation and auxiliary feedwater cross-connect service. Extensive environmental and electrical qualification was performed on these operators. These valves do not have free standing or separate electrical components. The seismic qualification documentation and electrical requirements satisfy the FSAR commitments. Determination of need to examine similar specifications is under review and will be discussed in the next report.

6. See Corrective Action Number 1 for probable cause.

Reportability

Consumers Power Company verbally informed D. Knop, USNRC Region III representative, that the MSIV deficiencies were a potentially reportable 50.55(e) concern on January 5, 1982. Bechtel is now separately performing an evaluation to determine if the items involved are actually reportable.

Submitted by: TJBalling

Approved by: DEAnderson for LH Curtis

Concurrence by: KR Bailey

TGB/DAK/am(M)
1/25/7

Concurrence by: DKReia for PQAE