



Consumers
Power
Company

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May 14, 1982

82-04 #1

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
AUXILIARY FEEDWATER PUMP TURBINE DRIVER
STEAM ADMISSION VALVE INTERLOCK SYSTEM
FILE: 0.4.9.60 SERIAL: 16191

This letter provides a final 50.55(e) report concerning deficiencies in the auxiliary feedwater pump turbine driver steam admission valve interlock system. This was reported to Mr C Williams and Mr R Walker of your staff on 4/14/82. This letter is a final report in that the corrective action for this problem has been determined and is scheduled to be complete by June 1, 1982.

The attachments to this letter give a complete description of the deficiency and the scheduled corrective action to be taken to resolve the problem.

James W. Cook

WRB/lr

Attachments: 1) Management Corrective Action Report MCAR-1, Report No 58,
dated April 14, 1982

2) MCAR-58, Final Report, dated April 30, 1982

CC: BJCook, NRC Resident Inspector
Midland Nuclear Plant

Document Control Desk, NRC
Washington, DC

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**QUALITY ASSURANCE PROGRAM
MANAGEMENT CORRECTIVE ACTION REPORT
MCAR-1**

Attachment 1
Serial 16191
82-04 #1

066675

JOB NO.: 7220

Q NO.:

REPORT NO.: 58

DATE: April 14, 1982

I DESCRIPTION* (Including References):

FSAR Section 10.4.9 (Rev 37) states, "The auxiliary feedwater system (AFW) is designed to function whenever the main feedwater system is not in operation; i.e., during start-up, shutdown and emergency conditions where feedwater is required. Contrary to the above, the existing design of the AFW pump turbine driver steam admission valve interlock system would block steam from both steam generators to the AFW turbine driver and prevent proper operation of the AFW system. The valves affected are: 1MO-3177A, 1MO-3177B, 2MO-3277A and 2MO-3277B.

RECOMMENDED ACTION* (Optional):

- 1) Implement a design change to insure proper operation of the AFW system.
- 2) Determine root cause of the deficiency and provide corrective action to prevent recurrence.
- 3) Based on corrective action 2, above, determine which scheme and logic diagrams need to be reviewed for similar deficiencies.
- 4) Issue interim report by April 30, 1982.

REFERRED TO:

☒ Engineering

☐ Construction

☐ QA Management

☐ _____

☐ Procurement

ISSUED BY:

D. M. Riea 4/14/82
for Project QA Engineer Date

II REPORTABLE DEFICIENCY:

☐ NO

☒ YES

NOTIFIED CLIENT:

10 AM 4/15/82
[Signature] 4/15/82
Project Manager Date

III CAUSE:

CORRECTIVE ACTION TAKEN:

AUTHORIZED BY: _____

Date

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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.

068315 Bechtel Associates Professional Corporation

SUBJECT: MCAR 58 (Issued 4/14/82)
Steam Generator Auxiliary Feedwater Isolation Valves

FINAL REPORT

DATE: April 30, 1982

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

Introduction

This report is submitted to provide the final status pursuant to MCAR 58.

Description of Deficiency

Based on random discrepancy findings in the schematic and logic diagram for the auxiliary feedwater (AFW) system, a complete review of schematic versus logic diagrams was made for this system by the electrical discipline. During this review, it was noted that valves IMO-3177A, IMO-3177B, 2MO-3277A, and 2MO-3277B will not function as intended. In accordance with FSAR Subsection 10.4.9 (Rev 37), the AFW system is designed to function whenever the main feedwater system is not operating, i.e., during startup, shutdown, and emergency conditions when AFW is required. During such conditions, valves IMO-3177A, IMO-3177B, 2MO-3277A, and 2MO-3277B should be open for admission of steam from steam generator to turbine driver to drive AFW pumps 1P-05B and 2P-05B. Contrary to the above, the existing design of the AFW pump turbine driver steam admission valve interlock system would block steam from both steam generators to the AFW turbine driver and prevent operation of the AFW system.

Probable Cause

The cause of this deficiency is considered to be misinterpretation of Logic Diagrams 7220-J-501(Q) and J-299(Q).

Corrective Action

The following actions will be taken.

1. Revise Logic Diagram 7220-J-501(Q) and J-299(Q), Sh 9, to provide clarification of the steam generator AFW isolation valve interlock system.

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2. Revise Schematic Diagram 7220-E-158, Sheets 24 and 25; Connection List 7220-E-900; and Panel Modification Drawings 7220-J201-69 and 166 to correct feed-only good generator (FOGG) signal interlocks to ensure proper operation of steam generating AFW isolation valves 1MO-3177A, 1MO-3177B, 2MO-3277A, and 2MO-3277B.
3. The electrical discipline has already reviewed all Class 1E schemes against logic diagrams associated with the AFW. In addition, approximately 100 out of 600 drawings of Class 1E schematics have been reviewed and no further deficiencies were found. This review was conducted by the engineers who were not involved in the original design or checking of the systems.

Safety Implication

The steam turbine driven AFW pumps provide the required feedwater to both steam generators of each unit. Valves 1MO-3177A, 1MO-3177B, 2MO-3277A, and 2MO-3277B are required to open for admission of steam from both steam generators to the AFW pump turbine driver. These valves will be closed in the presence of a FOGG signal. Inoperability of the steam generator feedwater isolation valves would result in loss of AFW to the steam generators and the inability to safely cool down the reactor coolant system during this event.

Forecast Dates on Corrective Actions

The forecast completion date for the items listed above is June 1, 1982.

Reportability

Based on the safety implication, this deficiency is considered reportable under the criteria contained in 10 CFR 50.55(e).

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Submitted by:

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Electrical Group Supervisor

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Project Engineering
Manager

Concurrence by:

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Engineering Manager

* By verbal authority
by telephone 4/3/82.
LHC

for

M.A. Dietrich
M.A. Dietrich
Project Quality Assurance
Engineer