



Consumers
Power
Company

James W Cook
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and Construction

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December 1, 1982

82-11 #1

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

MIDLAND NUCLEAR COGENERATION PLANT -
DOCKET NOS 50-329 AND 50-330
CABLE SUBSTITUTIONS
FILE: 0.4.9.67 SERIAL: 19102

On October 28, M J Schaeffer notified R N Gardner of your staff of a potential 50.55(e) concerning cable substitutions on four Class 1E cables which were not sized in accordance with the design requirements. This letter is the final 50.55(e) report on this subject.

The Midland Project Quality Assurance Department (MPQAD) initiated the cable routing reinspection program on October 20, 1982 for all cables that had not been reinspected but which were installed prior to March 15, 1982. The subject substitution of four cables was identified during the first week of these reinspections. At the time of the writing of this letter, approximately 2,000 cables have been reinspected with no additional cables having been identified as being the incorrect cable. Thus, this condition is considered to be an isolated event.

The attached Management Corrective Action Report provides the complete description of the specific deficiencies and the corrective actions taken. As noted in the report, the MPQAD reinspection program as well as the Project Quality Control Instruction (PQCI E-4.0) which covers installation of cables has been revised to contain a specific attribute to verify from the cable markings and the cable physical attributes that each cable meets the design requirements. If this condition would reoccur in new work, the PQCI attribute would find it. Further instances of this condition, if any, in old work (prior to November 12, 1982) will be inspected for by MPQAD.

James W. Cook

JWC/WRB/lr

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Attachments: (1) Management Corrective Action Report MCAR-1, Report No 62,
dated 11/16/82

(2) MCAR-62, Final Report, dated November 16, 1982

CC: Document Control Desk, NRC
Washington, DC

RJCook, NRC Resident Inspector
Midland Nuclear Plant

CBechhoefer, ASLB Panel
RSDecker, ASLB Panel
FPCowan, ASLB Panel
JHarbour, ASLB Panel
AS&L Appeal Panel
MMCherry, Esq
MSinclair
BStamiris
CRStephens, USNRC
WDPaton, Esq, USNRC
FJKelley, Esq, Attorney General
SHFreeman, Esq, Asst Attorney General
WHMarshall
GJMerritt, Esq, TNK&J
Great Lakes QA Managers

QUALITY ASSURANCE PROGRAM
MANAGEMENT CORRECTIVE ACTION REPORT
MCAR-1

093783

094655

REPORT NO.: 62

JOB NO.: 7220

Q NO.:

DATE: 11/08/82

I DESCRIPTION* (Including References):

Four Class 1E power cables (2AB5515A, 2AB5516A, 1EB018B, and 1EB019B) were identified on NCR M01-9-2-145. These cables were pulled and installed as AWG #14/3 instead of AWG #10/3. Drawing 7220-E37 Rev. 58 specifies that the cables be installed as AWG #10/3.

RECOMMENDED ACTION* (Optional):

- 1) Project engineering to document their evaluation of the condition for impact on safety for inclusion in the final report.
- 2) MPQAD has included in the cable routing reinspection plan an attribute for determining correct cable being installed.
- 3) Quality Control to include a clarified inspection point in the cable installation inspection plan (PQCI) to minimize recurrence.

REFERRED TO: Engineering Construction QA Management MPQAD
 Procurement QC (Site)

ISSUED BY: *D. Pereira* 11/08/82
for Project QA Engineer Date

II REPORTABLE DEFICIENCY:

NO

Potentially reportable
 YES

NOTIFIED CLIENT: 10/29/82
John P. Dutta 10/29/82
Project Manager Date

III CAUSE:

CLOSED

CORRECTIVE ACTION TAKEN:

See Final Report.

AUTHORIZED BY: _____
Date

AAPD DISTRIBUTION
MGR OF CONSTRUCTION
MGR OF ENGINEERING
MGR OF PROCUREMENT
MGR OF PROJ OPERATIONS
MGR OF QUALITY ASSURANCE
CONSTRUCTION MGR
ENGINEERING MGR
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PROJECT MGR
PROJ PROCUREMENT MGR
SITE MGR

OTHER DISTRIBUTION
MGR OF QA - TPO
GPD - QA MGR
LAPD - QA MGR
SFPD - QA MGR

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

CORRECTIVE ACTION IMPLEMENTED

VERIFIED BY: *D. Pereira* 11/16/82
for Project QA Engineer Date

* Describe in space provided and attach reference document.

Bechtel Associates Professional Corporation

094655

SUBJECT: MCAR 62 (Issued 10/29/82)
Four Class 1E Power Cable Installed as 3/C#14 AWG instead of 3/C#10 AWG

FINAL REPORT:

DATE: November 16, 1982

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

Introduction

This report provides an evaluation of the condition for impact on safety and the course of corrective action requested pursuant to MCAR 62.

Description of Deficiency

Four (4) Class 1E power cables (2AB5515A, 2AB5516A, 1EB018B, and 1EB019B) were pulled and installed as 3/C#14 AWG instead of 3/C#10 AWG. Circuit and raceway schedule 7220-E-37 Rev 58 specifies that the cables be installed as 3/C#10 AWG.

Summary of Investigation and Historical Background

This deficiency was identified and documented in Consumers Power Company NCR M01-9-2-145. These cables are installed in the power circuit of Decay Heat Return Letdown Bypass Valves 2M0-1158, 2M0-1159, 1M0-1058, and 1M0-1059.

Analysis of Safety Implication

In accordance with FSAR Subsection 8.3.1.1.8 Class 1E valve motors are specified with accelerating capability at 80% nominal voltage at their terminals. Based on this requirement, the predicted voltage at the motor control centers (MCC) and the circuit voltage drop that would be present with the #14 AWG cables in the circuit was calculated. An analysis of calculation results was performed to determine the voltage that would be available at the motor terminals. The results indicate that a voltage potentially below the limits for operation of valves 1M0-1058 and 1M0-1059 could result. Valves 2M0-1158 and 2M0-1159 would have sufficient voltage to operate. Failure of valve 1M0-1058 and 1M0-1059 to operate could adversely affect the safety of the plant.

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Final Report

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In addition, the full load current of each of the four valves (16 amps) is greater than the continuous current allowed by design calculation 7220-QPE-8(Q) for 3/C#14 AWG cable routed in cable tray (9 amps). This, however, could not result in conductor overheating or degradation as valve operation is intermittent and of short duration.

Probable Cause

The cause of this deficiency was:

- 1) That the cable reel tag carried both the reel serial numbers and the vendor's footage markings. The cable cut shop misinterpreted these numbers and identified the subject cables by the footage number rather than by the reel number. Since the footage number was the same for both 3/C#14 AWG and 3/C#10 AWG cables, the cable log sheet was in error as to the correct cable identity. Field procedure FIE 4.100(Q) was revised and reissued on June 29, 1982 to define and clarify which number should appear on the tag,
- 2) Project Quality Control Instruction E-4.0 did not require verification of correct cable type by means of cable jacket markings or physical characteristics.

Corrective Action

The corrective actions to resolve this MCAR are as follows:

1. MPQAD has included verification of correct cable type as part of the cable routing reinspection plan.
2. QC has revised Project Quality Control Instruction (PQCI E-4.0 Rev 11) to require verification of correct cable type by means of cable jacket markings or physical characteristics as opposed to by cable identification tag.
3. The four Cables 2AB5515A, 2AB5516A, 1EB018B and 1EB019B have been replaced with 3/C#10AWG.

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Reportability

Based on the safety implications, this deficiency is considered reportable in accordance with Title 10 of the code of the Federal Regulation Part 50.55(e)

Submitted by:

J.G. Kovach

J.G. Kovach
Electrical Group Supervisor

Approved by:

E.M. Hughes
E.M. Hughes
Project Engineer

Concurrence by:

R.L. Castleberry
R.L. Castleberry
Electrical Chief

Concurrence by:

E.H. Smith
E.H. Smith
Engineering Manager

Concurrence by:

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

LK
JGK/LK/se(E)
11/9/1-2