Consumers Power Company

James W Cook
Vice President - Projects, Engineering and Construction

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May 6, 1983 82-10 #3

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
UNDERRATED MOTOR CONTROL CENTER CONTROL CIRCUIT TRANSFORMERS
FILE: 0.4.9.66 SERIAL: 22178

Reference: J W Cook letter to J G Keppler, Same Subject:

Serial 19088, dated November 10, 1982
Serial 20679, dated January 28, 1983

The referenced letters were interim 50.55(e) reports concerning deficiencies in underrated control circuit transformers supplied by Gould-Brown Boveri for the 460 volt motor control centers. This letter is our final report on this subject.

The enclosure to this letter provides an analysis of the deficiency and the corrective actions that were taken with regard to this matter.

James W. Cook

WRB/cd

Enclosure: MCAR-61, Final Report, dated April 15, 1983.

CC: Document Control Desk, NRC
Washington, DC

RJCook, NRC Resident Inspector
Midland Nuclear Plant

OC0483-0017A-MP01

IE27

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1i2067

Bechtel Power Corporation
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Ann Arbor, Michigan
Mail Address: P.O. Box 1000, Ann Arbor, Michigan 48106

April 15, 1983

BLC-16531

Consumers Power Company
1945 Parnall Road
Jackson, Michigan 49201

Attention: Mr. J.W. Cook
Vice President
Projects, Engineering and Construction

Subject: Midland Plant Units 1 and 2
Consumers Power Company
Bechtel Job 7220
MCAR 61 - FINAL REPORT

The Final Report for MCAR 61, Undersized Starter Transformers in ITE-Gould Supplied MCCs, is attached for your information and use.

Very truly yours,

for John A. Rutgers
Project Manager

DNR
JAR/DNR/mad

Attachment: MCAR 61 - Final Report

cc: R.C. Bauman
W.R. Bird
G.S. Keeley
B.W. Marguglio
R.A. Wells
(all w/a)

Written Response Requested: No

Bechtel Associates Professional Corporation

Management Corrective Action Report (MCAR)

SUBJECT: MCAR 61 (Issued 10/13/82)

FINAL REPORT

DATE: April 15, 1983

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

Introduction

This report provides final status and the course of corrective action required pursuant to MCAR 61.

Description of Deficiency

Seventy-three Size 1 starters have been identified as having 50 VA control power transformers (CPT's). Specification 7220-E-7 (Q), Appendix A, Section 2.3 requires all CPT's to be one size larger than standard with a minimum size of 100 VA. Gould Drawings (Bechtel Vendor Print 7220-E7-11, 12, 13, 19, 20, 25, 26, 27, 28, 29, and 30) also indicate that these CPT's are 100 VA.

Summary of Investigation and Historical Background

This deficiency was discovered during field modifications of the Class 1E motor control centers (MCC's) and was documented in Bechtel NCR 4509 and Consumers Power Company NCR M-01-9-3-010.

Analysis of Safety Implications

An investigation was conducted to determine the effect of using 50 VA CPT's in Size 1 starters assuming minimum utilization voltage on the MCC bus. The results indicate that a voltage potentially below the limits for proper operation of the MCC starter coils could result. If this minimum design voltage (414 volts) condition were to occur, Class 1E equipment necessary to safely operate the plant may fail to operate.

Probable Cause

Gould has stated that the 50 VA CPT's were inadvertently supplied (reference letter from Brown-Boveri Electric, Inc. dated 12/22/82, Com 99297). Bechtel supplier quality has stated that during the final inspection process the supplier quality representative misinterpreted the specification requirements and inadvertently released the equipment for shipment.

Corrective Action

The corrective actions to resolve this MCAR are as follows:

1. The following steps were taken to cause replacement of the undersized CPT's:
   a) The vendor has been contacted and has agreed to furnish replacements for all undersized CPT's.
   b) The first partial shipment is scheduled for April 22, 1983, with the balance of shipment scheduled for May 27, 1983. Bechtel field procurement is following up on this action item.
   c) Bechtel construction will follow-up on the installation of the replacement CPT's as they are received from the vendor and Q-activities resume. The forecast completion date for completion of installation of these transformers is December 31, 1983.
   d) NCR 4509 and M-01-9-3-010 were issued to identify these discrepant CPT's and will be used to track the installation of these items.
2. All the starters listed on Attachments 1 and 2 have been inspected. Attachment 3 lists all locations where incorrectly sized transformers were found.
3. Gould has stated that they have made all affected personnel aware that they should check all documentation before supplying spare parts on existing projects. Bechtel has revised the hold points for Purchase Order 7220-E-7(Q) to include verification of the control power transformer rating.
4. Bechtel project supplier quality has made all affected supplier quality personnel aware of this deficiency and has revised the inspection criteria to assure compliance to the specification requirements.

Reportability

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

1i1906 1i2067

Submitted by: for J.G. Kovach
Electrical Group Supervisor

Approved by: E.M. Hughes
Project Engineer

Concurrence by: R.L. Castleberry
Electrical Chief

Concurrence by: E.H. Smith
Engineering Manager

Concurrence by: for M.A. Dietrich
Project Quality
Assurance Engineer

JGK/SB/se(E)
4/4/3(S)

Attachments:
1. Location of All Class 1E Size 1 Starters Supplied by Gould
2. Location of All Class 1E Size 2 and Larger Starters Supplied by Gould
3. Location of Starters with Incorrectly Sized Transformers

LOCATION OF ALL CLASS 1E SIZE 1 STARTERS
SUPPLIED BY GOULD (CPTs SIZE 100VA)

MOTOR CONTROL CENTERS:

MCC	CUBICLE LOCATION
1B23	2C, 2D, 2E, 3B, 3D, 4A, 4B, 4D, 4E, 6B, 6C, 6D, 7B, 7C, 7D, 8A, 8B, 8D, 8E, 9A, 9B, 9D, 9E, 10A, 10B, 10C, 10E
1B24	2C, 2D, 2E, 3B, 3D, 4A, 4B, 6B, 6C, 6D, 7B, 7C, 7D, 8A, 8B, 8C, 8D, 8E, 9A, 9B, 9C, 9D, 10A, 10B, 10C, 10D, 10E, 11C, 11D
1B53	1B, 2A, 3B, 3C
1B54	1B*, 1D, 1E, 3B
1B55	1D, 1E, 2C, 3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D, 5A, 5B, 5C, 5D, 6A, 6B, 6C, 6D, 7B, 7C, 7D, 8A, 8B, 8C, 10A, 10B, 10C, 10D
1B56	1D, 1E, 2A, 2B, 2C, 2D, 3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D, 5B, 5C, 5D, 6A, 6C, 6D, 7A, 7B, 7C, 7D, 8A, 8B, 8D, 8E, 9A, 9B, 11B, 11C
1B43	1D, 3C, 3D
1B44	1C, 1D, 1E, 2A, 2B, 3A, 3B, 3C
1B63	2C*
1B64	2C*
1B89	1E, 2C, 2D, 2E
1B90	1E, 2C, 2D, 2E
2B23	2C, 2E, 2E, 3B, 3D, 4B, 4D, 4E, 4A, 6B, 6C, 6D, 7B*, 7C, 7D, 8A, 8B, 8C, 8D, 8E, 9A, 9B, 9D, 9E, 10A, 10B, 10C*

2B24	2C, 2D, 2E, 3B, 3D, 4A, 4B, 4E*, 6B, 6C, 6D, 7B*, 7C, 7D*, 8A, 8B, 8C, 8D, 8E, 9A, 9B, 9C, 9D, 10A, 10B, 10C*, 10D, 10E, 11B*, 11C, 11D
1B53	1B*, 1D, 1E, 2C
2B54	1B*, 1C, 2A, 2C, 2D, 3B, 3C
2B55	1D, 1E, 2B*, 2C, 2D, 3A, 3B, 3C, 3D, 4A, 4B*, 4C, 4D*, 5A, 5B, 5C, 5D, 6A, 6C*, 6D*, 7B, 7C, 8A, 8B, 8D*, 9D, 10B, 10E
2B56	1D, 1E, 2A, 2B*, 2C, 2D*, 3A, 3B, 3C*, 3D, 4A, 4B*, 4C, 4D, 5B, 5C*, 5D, 6A, 6C*, 6D*, 7A*, 7B, 7C, 7D, 8A, 8D, 8E, 9A, 9C, 10C, 10D, 10E, 11D
2B43	1C, 1D, 1E, 2A, 2B, 3B, 3C
2B44	1C, 1D, 1E, 2A, 2B, 3A, 3B, 3C
0B45	1D*, 2B, 2C, 3A, 3B, 3E, 4A, 4B, 4C*, 4D, 5B, 5C, 5D, 6A, 6B, 6C, 7C
0B46	1D*, 2B, 2C, 3A, 3B, 3E, 4A, 4B, 4C*, 4D, 5B, 5C, 5D, 6A, 6B
2B63	2C*
2B64	2C*
0B65	1D*
0B66	1D*
0B68	1B*, 1D*, 1E*, 2B*, 2C*
0B69	1B*, 1D*, 1E*, 2B*, 2C*
2B89	1E, 2C, 2D, 2E
2B90	1E, 2C, 2D, 2E

Note: This listing is based on Drawings 7220-E-17(Q), Rev 18 and 7220-E-18 (Q) Rev 17

LOCAL CONTROL STATIONS

1NM03856
2NM03956
1NM03893A1
1NM03893A2
1NM03893B1
1NM03893B2
1NM03868A
1NM03868B
2NM03968A
2NM03968B
2NM03993A1
2NM03993A2
2NM03993B1
2NM03993B2

*Indicates this equipment is turned over to Consumers Power Company

JGK/SB/se(E)
4/4/3(S)

LOCATION OF ALL CLASS 1E STARTERS SIZE 2
AND LARGER SUPPLIED BY GOULD

MOTOR CONTROL CENTERS:

MCC	CUBICLE LOCATION
Size 2 Starter (100VA)	
1B23	2B, 3C, 6A, 7A
1B24	2B, 3C, 6A, 7A
1B55	2A, 9E, 10E
1B56	5A, 10D, 11D
1B63	1C, 2B
1B64	1C, 2B
Size 3 Starters (150VA)	
1B53	2B, 3A
1B54	2D, 3D
2B53	2A, 3A
2B54	2E, 3D
OB45	7D

Size 4 Starters (250VA)

1B23	1C, 5B
2B24	1C, 5B
1B53	2D, 3D
1B54	2A, 3C
1B56	9D
1B43	2D
1B44	2D
2B23	1C, 5B
2B24	1C, 5B
2B53	2D
2B54	3A
2B56	9D
2B43	2D
OB45	6D
2B44	2D
OB46	6D

Note: 1. This listing is based on Drawings 7220-E17(Q), Rev 18 and 7220-E18(Q), Rev 17
2. There are no Class 1E local control stations with Size 2 of larger starters

JGK/SB/se(E)
4/4/3(S)

LOCATION OF STARTERS WITH INCORRECTLY SIZED TRANSFORMERS

MCC	CUBICLE LOCATION
0B45	6B, 6C
0B46	6B
1B55	7D, 10A, 10B
1B56	4C, 11B, 11C
2B23	6C, 9B
2B55	5A, 8B, 10E
2B56	4C, 9C, 11D
1B43	1D, 3C
1B44	1D, 3C
2B43	1D
2B44	3C
0B65	1D
0B68	1D, 1E
0B69	1D, 1E

In addition to those listed above there are 45 spare starters with incorrectly sized transformers located in the warehouse.

JGK/SB/se(E)
4/4/3(S)