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September 20, 1979

Ivan W. Smith, Esq.
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Gustave A. Linenberger
Atomic Safety and Licensing Bd. Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Frederick P. Cowan
Apt. B-125
6152 North Verde Trail
Boca Raton, Florida 33433

Re: Consumers Power Company
(Midland Plant, Units 1 and 2)
Docket Nos. 50-329, 50-330

Gentlemen:

Enclosed are five interim reports submitted by Consumers Power Company to the Nuclear Regulatory Commission pursuant to 10 C.F.R. §50.55(e). The report relating to the diesel generator building settlement references an enclosure, copies of which will be provided to members of the Atomic Safety and Licensing Board and any party upon request.

Very truly yours,

Martha E. Gibbs
Martha E. Gibbs

MEG bc

cc: Service List w/enclosures

7911020/34

1248 276



Consumers
Power
Company

RELATED CORRESPONDENCE

Stephen H. Howell
Senior Vice President

General Offices: 1945 West Parnall Road, Jackson, Michigan 49201 • (517) 788-0453

September 12, 1979
Howe-247-79



Mr J G Keppler, Regional Director
Office of Inspection and Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND NUCLEAR PLANT -
UNIT NO 1, DOCKET NO 50-329
UNIT NO 2, DOCKET NO 50-330
DROP-IN ANCHORS

In accordance with the requirements of 10 CFR 50.55(e), this letter constitutes an interim report on the status of installed Hilti Drop-In Anchors which did not meet the tension testing requirements.

The attachments to this letter provide a description of the discrepancy, potential safety implications, investigation and planned corrective actions.

Another report, either interim or final, will be sent on or before October 12, 1979.

WRB/lb

- Enclosures: 1. Quality Assurance Program, Management Corrective Action Report, MCAR-1, Report 34, dated August 21, 1979
2. Letter, J A Rutgers to G S Keeley, MCAR-34 Interim Report #1, dated September 5, 1979.

CC: Director of Office of Inspection & Enforcement
Att: Mr Victor Stello, USNRC (15)

Director, Office of Management
Information & Program Control, USNRC (1)

Dupe
7909140370
1248 277

BCC: JLBacon, M-1085A
RCBauman, P14-412
WRBird, JSC-216B
JLCorley, Midland
LHCurtis, Bechtel AA
LADreisbach, Bechtel-Midland
DEHorn, Midland
GSKeeley, P14-408B
EWMarguglio, JSC-220A
DEMiller, Midland
WGMoring, Bechtel AA
JARutgers, Bechtel AA
MEGibbs, IL&B
Great Lakes QA Managers
File: 0.4.9.33

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QUALITY ASSURANCE PROGRAM
MANAGEMENT CORRECTIVE ACTION REPORT
MCAR-1

Enclosure 1
Howe-247-79

REPORT NO. 34

JOB NO. 7220

QNO. Various

DATE August 21, 1979

I *DESCRIPTION (Including references):

Specification 7220-C-305, Section 6.2.2 requires tension testing of Drop-In Anchors to meet the values indicated in table 3.2. Additional testing was required by Project Engineering in letter BEBC-2404, dated 8-21-78 and BEBC-2965, dated 5-18-79, to verify past installation practices. A sample and test of 60 randomly selected anchors were to be tested with no failures. Contrary to this, 9 out of 32 drop-in anchors tested utilizing 4 sizes have failed. NCR-2461 has been generated to identify these failures.

*RECOMMENDED ACTION (Optional)

1. Construction

- a) Provide Engineering with data as to utilization, quantity, location and size of all "Q" Supports, utilizing drop-in anchors installed to date.
- b) Determine the cause (how and why) of the anchors failures.

(continued on page 2)

REFERRED TO ☒ ENGINEERING ☒ CONSTRUCTION ☐ QA MANAGEMENT ☒ Quality Control
☐ PROCUREMENT

ISSUED BY W. Duesbach 8-21-79
Project QA Engineer Date

II REPORTABLE DEFICIENCY

☐ NO

Potentially Reportable, to
be determined by Project
Engineering
☐ YES

NOTIFIED CLIENT

8/20/79
Date

A. J. Martin
Project Manager

8/22/79
Date

III CAUSE

CORRECTIVE ACTION TAKEN

POOR ORIGINAL

AUTHORIZED BY _____
Date

STANDARD DISTRIBUTION

DIVISION QA MANAGER
MANAGER OF QA - TPO
PD - QA MANAGER
APO QA MANAGER
AD QA MANAGER
PROJECT MANAGER
CLIENT
AD PROJECT OPERATIONS MANAGER
AD PROCUREMENT MANAGER
AD MGR OF ENGINEERING
AD MGR OF CONSTRUCTION

ADDITIONAL DISTRIBUTION - AS APPROPRIATE

ENGINEERING MANAGER
PROJECT ENGINEER
AAO PROCUREMENT SUPPLIER QUALITY MGR
CONSTRUCTION MANAGER
PROJ SUPT PROJ CONSTR MANAGER
CHIEF CONSTR QC ENGINEER
PF OCE
DIVISION PROCUREMENT MGR
PROJ PROCUREMENT MGR
DIV SUPPLIER QUALITY MGR

FORMAL REPORT TO CLIENT

(If Section II Applies)

Date

CORRECTIVE ACTION IMPLEMENTED

1248 279

VERIFIED BY

Project QA Engineer

Date

* Describe in space provided and attach reference document

RECOMMENDED ACTION (Continued)

- c) Take necessary actions to preclude recurrence.
2. Quality Control
- a) Determine why this high rate of failure for the Drop-In Anchors was not indicated by the normal in-process testing of anchors, referenced in section 6.0 of Spec. 7220-C-305.
3. Project Engineering
- a) Evaluate this condition for reportability under 10 CFR 50.55(e) and issue interim report to the PQAE by September 4, 1979, based on input from engineering and construction and quality control.
 - b) Determine adequacy of all "Q" Drop-In Anchors.
 - c) Determine cause of failure and take action to prevent recurrence.

1248 280 .

Bechtel Power Corporation

777 East Eisenhower Parkway
Ann Arbor, Michigan

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



September 5, 1979

BLC-8115

Mr. G. S. Keeley
Project Manager
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

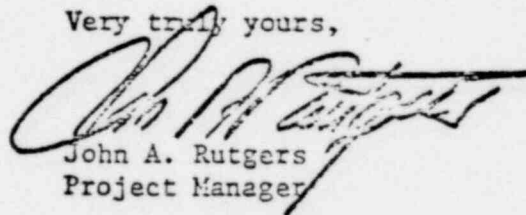
Midland Units 1 & 2
Consumers Power Company
Bechtel Job 7220
MCAR 34 INTERIM REPORT 1
Files: 2417/2801

Dear Mr. Keeley:

Attached for your information and use is Interim Report 1 for MCAR 34, which addresses Drop-In Anchors. The report indicated a failure rate of 28%. However, since writing the Interim Report, additional results have indicated that of 66 Drop-In Anchors tested, there were 13 failures, resulting in a failure rate of 20%.

The next report is scheduled to be issued on October 2, 1979.

Very truly yours,



John A. Rutgers
Project Manager

JAR/SKC/kb

Attachment (3 pages)

cc: Mr. W. R. Bird
Mr. B. W. Marguglio
Mr. D. B. Miller

RECEIVED
SEP 7 1979

QUALITY ASSURANCE

1248 281

Bechtel Associates Professional Corporation

Attachment to ELC-8115

SUBJECT: MCAR 34 (issued 8/21/79) Drop-In Anchors

INTERIM REPORT 1

DATE: September 4, 1979

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

Introduction

As requested in MCAR 34, this report summarizes project engineering's evaluation and action regarding the failure of the drop-in anchors to meet the tension testing criteria furnished by project engineering.

Description of Deficiency

Specification 7220-C-305, Section 6.2.2 requires tension testing of drop-in anchors to meet the values indicated in Table 3.2 of that specification. Inprocess inspection of drop-in anchors is required in Specification 7220-C-305. However, when it was learned that this inspection at the time of installation was not being done at all times, testing was requested by project engineering on August 21, 1978, and again on May 18, 1979, to verify the adequacy of past installation.

For the testing results to be acceptable, it was necessary that a sample of 60 randomly selected anchors be tested with no failures. According to Specification 7220-C-305, the anchor is considered acceptable if a test load equal to twice the design allowable tensile load is applied and the concrete does not break out; the anchor does not break, distort, or deform; and the anchor does not slip excessively or become loose. Excessive slippage is evident when the washer between the bolt and the concrete can be rotated by hand. However, upon completing tension tests on 32 drop-in anchors involving four different bolt diameters, nine failures had occurred. A nonconformance Report (NCR) has been generated to identify these failures. Approximately 900 drop-in anchors had been installed as of August 17, 1979, when project engineering requested that drop-in anchor installation be suspended until further notice.

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Bechtel Associates Professional Corporation

Attachment to BLC-8115

MCAR 34

Interim Report 1, September 4, 1979

Page 2

Investigation

The loads listed for drop-in anchors in Specification 7220-C-305, Table 3.2 were established by Hilti, the manufacturer, through their own testing program. Project engineering met recently with a representative of Hilti at the Midland site to witness testing and installation practices used for the drop-in anchors. Only the electrical group used the drop-in anchor bolts for substantial loads; the other groups have limited their usage to loads of less than approximately 200 pounds.

The Hilti representative verified that the testing procedure used is consistent with Hilti's own test procedure. He emphasized that, if the plug which expands the anchor is not driven in completely with the Hilti tool, the full capacity will not be attained. The design of the Hilti drop-in anchors and the method of setting are illustrated in Figure 1. Based on a preliminary investigation on August 23, 1979, some of the installed plugs were found to be not fully driven into the anchor; however, the extent to which this contributed to the cause of the anchor failures was not established. It was determined that further testing would be needed to establish the specific cause(s) and extent of the anchors' failure to pass the test.

Safety Implications

Project engineering's investigation of the deficiency shows an implication of an adverse effect on plant safety, and therefore is reportable under 10 CFR 50.55(e). Preliminary indication of a 28% failure rate demonstrates an inability to ensure the adequacy of anchor bolt capacities.

Corrective Action

Project engineering has requested that additional testing be performed on a random sampling of 100 drop-in anchors to establish what portion were not correctly set and the effect of this deficiency on the bolt capacity. Results are expected by September 7, 1979; the evaluation will be presented in the next report scheduled for October 2, 1979.

Submitted by:

Approved by:

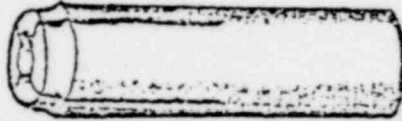
Concurrence by:

BRM/js
8/28/2

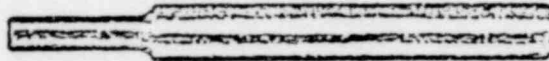
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DROP-IN ANCHOR

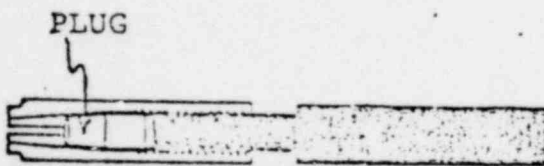
Attachment to BLC-8115
MCAR 34 INTERIM REPORT 1
September 4, 1979
Page 3



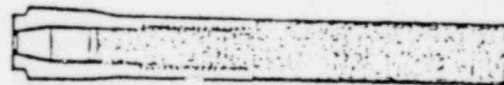
TYPICAL HILTI DROP-IN ANCHOR



HILTI SETTING TOOL



BEFORE EXPANSION



AFTER EXPANSION

(PER HILTI ANCHOR AND FASTENER DESIGN MANUAL)

FIGURE 1.

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**Consumers
Power
Company**

STANDARD CORRESPONDENCE

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September 10, 1979
Howe-246-79

Mr J G Keppler, Regional Director
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799 Roosevelt Road
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MIDLAND NUCLEAR PLANT
UNIT NO 1, DOCKET NO 50-329
UNIT NO 2, DOCKET NO 50-330
COMPONENT QUALIFICATION TEST DOCUMENTATION RE-REVIEW

Reference: S H Howell letters to J G Keppler; Midland Nuclear Plant;
Unit No 1, Docket No 50-329; Unit No 2, Docket No 50-330;
Component Qualification Test Documentation Re-Review;

- 1) Serial Howe-252-78, dated November 28, 1978
- 2) Serial Howe-17-79, dated January 17, 1979
- 3) Serial Howe-79-79, dated March 9, 1979
- 4) Serial Howe-133-79, dated May 4, 1979
- 5) Serial Howe-193-79, dated July 6, 1979

The referenced letters were interim 50.55(e) reports as is this letter.

The B&W detailed re-review of qualification documentation, consisting of comparison of the conditions the equipment was qualified to versus the postulated design basis accident conditions as defined in the FSAR, is now scheduled for completion in November, 1979.

As of August 15, 1979, qualification has been completed on 15 of the Bechtel Purchase Orders for safety grade equipment. For the qualification to be considered complete, any questions resulting from the re-review must be resolved and all required qualification documentation must have been received and approved by Bechtel. The enclosure provides the latest status of the Bechtel qualification re-review effort.

Beyond the previously identified Foxboro Model E10 transmitters, no other equipment has been determined not to be capable of meeting its qualification requirements.

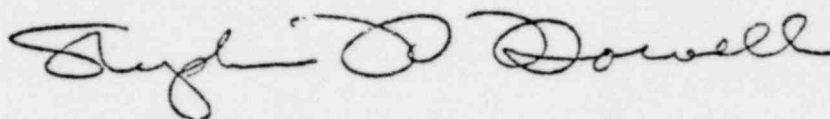
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Howe-246-79

Another 50.55(e) report, either interim or final, will be sent on or before March 1, 1980.



PWJ/WRB/lb

Enclosure: Qualification Test Status Report, Revision 9,
dated August 15, 1979

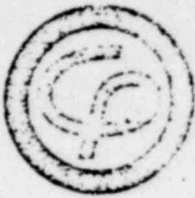
CC: Director, Office of Inspection & Enforcement
Att: Mr Victor Stello, USMRC (15)

Director, Office of Management
Information & Program Control, USMRC (1)

w/o Enclosure:

BCC: JLBacon, M-1085A
WRBird, JSC-216B
JLCorley, Midland
LHCurtis, Bechtel AA
LADreisbach, Bechtel-Midland
GSKeeley, P14-408B
CEMahaney, B&W
BWMarguglio, JSC-220A
DEMiller, Midland
JFNewgen, Bechtel-Midland
JAPastor, P14-403
JIRutgers, Bechtel AA
MJSchaeffer, Midland
MEGibbs, IL&B
File: 0.4.9.22

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CONSUMERS
POWER
Company

Stephen H. Howell
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September 7, 1979
Howe-241-79

Mr J G Keppler, Regional Director
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US Nuclear Regulatory Commission
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Glen Ellyn, IL 60137

MIDLAND NUCLEAR PLANT
UNIT NO 1, DOCKET NO 50-329
UNIT NO 2, DOCKET NO 50-330
PRESSURIZER HEATER SYSTEM

- References: (a) Letter, S H Howell to J G Keppler; Midland Nuclear Plant;
Unit No 1, Docket No 50-329; Unit No 2, Docket No 50-330;
Pressurizer Heater System; Howe-4-79; dated January 5, 1979
- (b) Letter, S H Howell to J G Keppler; Midland Nuclear Plant;
Unit No 1, Docket No 50-329; Unit No 2, Docket No 50-330;
Pressurizer Heater System; Howe-91-79; dated March 16, 1979
- (c) Letter, S H Howell to J G Keppler; Midland Nuclear Plant;
Unit No 1, Docket No 50-329; Unit No 2, Docket No 50-330;
Pressurizer Heater System; dated June 8, 1979

The referenced letters were interim 50.55(e) reports as is this letter.

No significant problems have been encountered since the last interim report, and the schedule for the final delivery and completion of the qualification of all involved components is still June of 1980.

Another 50.55(e) report, either interim or final, will be provided on or before February 1, 1980.

PWJ/WRB/lb

CC: Director of Office of Inspection & Enforcement
Att: Mr Victor Stello USNRC (15)

Director, Office of Management
Information & Program Control, USNRC (1)

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Pupl

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BCC: JLBacon, M-1085A
RCBauzan, P14-412
WRBird, JSC-216B
LHCurtis, Bechtel AA
JLCorley, Midland
LADreisbach, Bechtel-Midland
GSKeeley, P14-408B
CEMehaney, B&W Lynchburg
BWMarguglio, JSC-220A
DEMiller, Midland
WGMoring, Bechtel AA
JHewgen, Bechtel-Midland
MEGibbs, H&B
File: 0.4.9.23

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