

STONE & WEBSTER, INC.

P.O. Box 2311 BOSTON, MASSACHUSETTS 02107

United States Nuclear Regulatory Commission
Midland Site Resident Office
Route 7
Midland, Michigan

February 9, 1984

J.O. No. 14358
Ref. MFR 72

Attention: Mr. Cook

LOCKET NO. 50-330/230
MIDLAND PLANT UNITS 1 & 2
INDEPENDENT ASSESSMENT OF UNDERPINNING
REPORT NO. 72

A copy of the Independent Assessment of Underpinning Weekly Report No. 72 for the period of January 29, 1984 through February 3, 1984 is enclosed with this letter. Included as attachments are the minutes of the daily meetings held during the week between members of the Assessment Team and Site Engineering, Construction, and Quality Assurance personnel.

If you have any questions with respect to this report please contact me at (617) 589-2011.

A. Stanley Lucks

A. Stanley Lucks
Project Manager

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APR 17 1984

Independent Assessment of Underpinning

Pier E/W: Construction of these piers continues.

Level C wales: Drilling continued for installation of wale supports on the east & west sides.

WB grillage: The WB grillage was locked off at the end of last week. The differential movement measured at the time of lock off was 60 mils. By the end of this week, differential movement has dropped to 45 mils.

SWPS: Grouting along the perimeter of SWPS underpinning excavation on the east side has been completed. Excavation in this area was started on 2/3/84.

Assessment Team Observation - Construction

Excavation, grouting and placement of lagging for the drop pit to piers CT-1 and CT-12 began this week. Placement of grout for soils stabilization was performed in accordance with the procedures. The Assessment Team observed lagging installation and related backspacing operations. Workmanship for performance of the above referenced work and the resulting installation was good.

Drifting to pier Kc-4 continued this week. Use of the Moulton concrete drilling machine for removal of fill concrete in the drift appears to be more efficient as the operators become more familiar with use of the machine. Installation of drift support steel was observed by the Assessment Team. Steel installation was performed in accordance with the applicable procedures and the results are of good quality.

Assessment Team Observations - QA/QC

As part of the Stop Work Order resolution, one time deviation FCRs/FCNs are retired from the documents after a 30 day period. This helps to reduce the number of attachments to the documents. These retired documents are listed on a separate register at Central Document Control. As a result of the 30 day time limit, some FCRs/FCNs on which work had not been completed prior to the Stop Work Order were retired. Upon lifting of the Stop Work Order, Bechtel determined that a procedure was needed to ensure proper implementation of retired attachments. To effect this, an interim method has been implemented for handling and controlling one time deviations. The Assessment Team believes that the use of this interim method is proper during development of the final procedure. The Assessment Team will continue tracking this item until the final procedure has been implemented.

The status of the QAP review program was discussed this week. As a part of the QAP review, a pilot program has been started that will evaluate the effectiveness of the revised PQCI for expansion anchor installation against the current issue. Review of construction procedures and PQCI's for structural steel fabrication is ongoing. In addition, the review program has been expanded to include the welding PQCI and related construction procedures. No schedule has been established for providing recommendations to CP Co as to the feasibility of implementing these three procedures and PQCI's nor have recommendations and guidelines for further reviews been made. A commitment was made at the end of September 1983 to make a recommendation regarding implementation of this program for a majority of the PQCI's within a few weeks.

The assessment of the assessment team that a more sustained effort should be made to all parts of involved with the 2000 series program and covering the feasibility assessment of revising the rules and related construction procedures.

The assessment team was provided with an update on construction activities and materials being undertaken by US Testing. The contract for asphalt pavements by the MPOAD ended in May 1983 has been completed. US Testing has set a goal of qualifying 90% of US Testing technicians to at least 10 certifications in five months. A list of key tests for which the two laboratory chiefs will be certified is being formulated. The 10 certifications key tests is expected to be issued within a week. Certification of the lab chiefs to at least level I for these key tests is forecasted for April 1, 1984. Upgrading of a level II inspector to level III is presently in progress. Issuance of work instructions prepared under the new format is expected to begin at the end of February and be completed approximately 2 months thereafter. The assessment team believes that satisfactory progress is being made in implementing the required upgrading. Efforts to meet the schedule that has been established for certifying inspectors and lab chiefs and issuance of work instructions should be maintained.

Work Activity Packages

No Work Activity Package overviews were opened during the past week.

Nonconformance Identification Reports

The following Nonconformance Identification Reports (NIR's) remain open or have been closed during the past week.

<u>NIR No.</u>	<u>Description</u>	<u>Date</u> (Opened) (Closed)
20	Concrete Admixture Dispenser Calibration	12/1/83
21	Welding Procedures	1/28/84

Open Items

Items discussed during meetings are categorized as follows:

OPEN ITEM - An item for which an action is required. The item will remain open until the required action has been taken. Tracking is required.

CLOSED ITEM - An item, usually brought forward by the assessment team, that is discussed and adequately responded to. No tracking is required.

INFORMATION ITEM - An item, brought forward to provide general background information regarding work, such as work status or an upcoming design change. No tracking is required.

Predecessor Assessment of Underpinning

DEFINITION - An opinion or suggestion, given by the Assessment Team expressing an alternate construction or quality assurance technique. The opinion or suggestion is given as a possible alternate that may facilitate an operation.

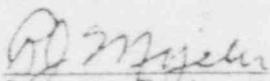
Closed Item (C-I) - This notation identifies an action that closes a previously specified open item. Tracking of the open item stops.

The following is a listing of all Open items from the Daily Meeting Notes with Material, the Weekly Meeting with MPOAD or the text of Weekly Reports. Carry-over items from past weeks which have been closed this week are also listed.

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
WR 64, Pg. 9	Weld Tech Sheets	72-12
57-17	Wall Ties	Open
58-3	Tubular Steel Lagging	Open
64-7	QAP Review Program	Open
64-10	Trend Analysis	Open
WR 64, Pg. 1	US Testing Corrective Action	Open
66-50	Request for IR Distribution	Open
70-2	Review of Crack Mapping Programs	Open
70-6	Close Out of Lessons Learned Action Items	Open
70-21	Document Transmittals	Open
71-4	US Testing Work Instructions	Open
71-8	Distribution and Implementation of Controlled Documents	72-20
71-9	US Testing QA Manual	Open

Emergent Assessment of Underpinning

<u>Item No</u>	<u>Description</u>	<u>Closure</u>
71-17	Computerized Civil Drawing Register	Open
71-29	Use of Material FCRs	Open
71-30	Overview of FSC Document Control Station	72-8
72-12	Welding Procedures	Open
72-20	Controlled Document Procedures	Open
72-26	Recertification of Equipment and Tools	Open


Project Engineer


Project Manager

Report of Daily Meetings
Independent Assessment of Underpinning
Midland Plant Units 1 & 2
Midland Power Plant

Held at Midland Site
Midland, Michigan
January 20, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>WP&A</u>	<u>Stone & Webster</u>
D. Murray	J. Fisher	J. McMaster	D. Benvie
R. Wheeler	E. Ovikl	R. Seve	L. Bruen
	J. Gaydos		<u>Parsons</u>
	H. Johnson		B. Matros

PURPOSE

This meeting is held each day to discuss items regarding the Independent Soils Assessment at the Midland Plant, Units 1 & 2.

DISCUSSION

Item 72-1 - Auxiliary Building Underpinning Activities.

Reshoring of pier Kc-9 drift is presently being welded into place in preparation for finger drifting to the pier.

Drop pits to piers E/W-16 have been completed to the footings of the buttress access shafts. Removal of footings has begun.

Intermittent activity continues on piers E/W-13 and level C wales.

Excavation of the drop pit is in progress for pier CT-12. Initial grouting has been performed in preparation of lagging placement for the drop pit. An alternate sequence of grouting and excavation will continue during construction of pier CT-12.

Installation of anchor bolts and plates for CT-1 access drift support sets is complete.

(INFORMATION ITEM)

Item 72-2 - Jacking of Piers.

J. Fisher reported that the W8 grillage was locked off on 1/27/84. Upward differential movement measured at the time of lock off was 69 mils. Upward differential movement measured as of this morning at the W8 grillage has decreased to 51 mils from 69 mils. Pier E11 was jacked to determine the load on the pier. (INFORMATION ITEM)

Item 72-3 - SWPS-Production Grouting.

J. Fisher reported that production grouting will start for the access shaft at the east end of the SWPS once the work permit has been approved. (INFORMATION ITEM)

Project: 72-1 - Welding
Contract: 72-1-1-1
Contract: 72-1-1-2
Contract: 72-1-1-3

File at: 72-1-1-1
Michael J. Fisher
October 11, 1994

Item 72-1 - Weld Tech Sheets

The status of the Assessment Team comments on weld tech sheets was discussed. A meeting is scheduled for later in the day between the Assessment Team and FSO to discuss particular comments in detail. (Item WR 54-pg. 2 remains OPEN) (INFORMATION ITEM)

Item 72-5 - Close out of Lessons Learned Action Items

J. Fisher reported that resolution of the 11 action items pertaining to lessons learned from construction activities at the Auxiliary Building is on schedule. Bechtel will provide their responses to the Assessment Team in the near future. (Item 70-6 remains OPEN) (INFORMATION ITEM)

New Items

No new items were discussed.

Response Items

Item 72-6 - Overview of FSO Document Control Station

L. Rouen reported that his overview of the FSO document control station has been completed. The overview verified that documents distributed after lifting of the Stop Work Order have been posted properly at the FSO Document Control Station. (CLOSES ITEM 71-30)

1000 US Testing Division
Independent Assessment of Contaminants
Midland Plant Units 1 & 2
Consumers Power Company

held at Midland Site
Midland, Michigan
January 9, 1984

Present For:

Consumers Power

C. Murray
R. Wheeler

Bechtel

J. Fisher
E. Davis
J. Caydos

MCDAL

J. McMaster
R. Wheeler

Stone & Webster

D. Gervie
L. Souer
J. Springer

Parsons

B. Metros
J. Rainer

PURPOSE

This meeting is held each day to discuss items regarding the Independent Soils Assessment at the Midland Plant Units 1 & 2.

DISCUSSION

Status Items

Item 72-7 - Auxiliary Building Underpinning Activities.

Removal of buttress access shaft footings for advancement of drop pits to Piers E/W-16 continues.

The drift invert from Kc-2 to Kc-3 is being prepared for placement of a reinforced concrete mudmat.

Backpacking behind lagging for the access drift to CT-1 is complete.

Pier E-12 was placed on active jacks yesterday.

Upward differential movement measured this morning at the W8 grillage has decreased to 45 mils from 51 mils.

(INFORMATION ITEM)

Item 72-8 - US Testing QA manual.

J. Caydos reported that the new revision of the US Testing QA manual is presently being reviewed at their headquarters and issuance is scheduled for 2/9/84. (Item 71-9 remains OPEN) (INFORMATION ITEM)

Item 72-9 - SWPS-Production Grouting.

J. Fisher reported that the work permit for soils stabilization at the SWPS has been issued and production grouting began yesterday. (INFORMATION ITEM)

Welding Department
Welding Division
January 27, 1964

Item 72-11 - Resolution of NCF's.
J. Ratner expressed concern that two NCF's opened last October and November still remain open. One NCF was written on work at the Level C wale when drill limits to the drill permit were exceeded and the other was written against clip angles used on the deep seated bench work. J. Fisher responded that due to the Stop Work Order, resolution of these FCH's had been delayed, but now that the Stop Work Order has been lifted, the Level C wale will be reworked to close out the first NCF and the second NCF will be dispositioned to "use as is." (CLOSED ITEM)

New Items

Item 72-11 - Resolution of NCF's.

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Response Items

Item 72-12 - Weld Tech Sheets.

NIR # 21 was issued yesterday as a result of the Assessment Teams review of the welding procedures. In response to the NIR, Bechtel stated that the welding procedure qualification test records (PQR's) that specified a range of values for root openings will be requalified to a root opening of 0 in. The PQR's which did not specifically identify the vertical weld progress as either up or down will be revised to reflect vertical welding progression as being up. This was the progression used for the original qualification. Additionally, Bechtel noted that the following items will be incorporated into the applicable welding procedures:

1. A note will be added per AWS D1.1-80 section 3.4.7 to clarify preheat requirements for welding.
2. A statement will be added to restrict the use of the stainless steel welding procedure to non structural welds only.
3. Reference to all processes other than Shielded Metal Arc welding will be deleted in Spencer White & Prentiss and Mergentime welding procedures.

Resolution of the above referenced items will be tracked by the Assessment Team. (CLOSES ITEM WF 54, PG. 3) (OPEN ITEM)

Item 72-12 - Meeting
Independent Assessment of SWPS-1983
Midland Plant Units 1 & 2
Consumers Power Company

Held at Midland Site
Midland, Michigan
February 1, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MC&P</u>	<u>Soils & Geotech</u>
B. Wheeler	J. Fisher	J. McMaster	I. Barvie
J. Schaub	E. Cvikel		R. Lykens
R. Wieland	J. Cayton		F. Majeski
C. Mooney	W. Brander		
			<u>Larsen</u>
			J. Ratner

PURPOSE

This meeting is held each day to discuss items regarding the Independent Soils Assessment at the Midland Plant, Units 1 & 2.

DISCUSSION

Item 72-13 - Auxiliary Building Underpinning Activities.

Finger drifting to pier Kc-9 began yesterday.

The drift invert from Kc-2 to Kc-3 is ready for concrete placement.

Excavation of the drop pit to CT-1 started yesterday.

The upward differential movement measured this morning at the W8 grillage has increased from 45 mils to 48 mils.

(INFORMATION ITEM)

Item 72-14 - SWPS-Production Grouting.

J. Fisher stated that due to the proximity of dewatering wells 507 and 514 to the soil stabilization activities, the areas adjacent to these wells will not be grouted. (INFORMATION ITEM)

Item 72-15 - QAP Review Program.

J. Fisher stated the QAP Task Force committee would hold a meeting today to discuss the status of the PQCI review. (Item 64-7 remains OPEN)
(INFORMATION ITEM)

Item 72-16 - Use of Retired FCRs.

J. Fisher reported that an interim method of handling and controlling retired FCRs for use on work that is not yet complete has been implemented. This interim method will remain in effect until the procedure for handling retired FCRs has been revised to establish a satisfactory system for control

Independent Assessment of
Midland Plant Units 1 & 2
Consumers Power Company

Held at Midland Site
Midland, Michigan
February 2, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>Midco</u>	<u>Stone & Webster</u>
R. Wheeler	J. Fisher	J. McMaster	D. Benoit
C. Murray	H. Cvikel	R. Sava	B. Lykens
	J. Caydon		R. Majeski
	R. Cleary		<u>Parsons</u>
	R. Bradford		J. Oliveira

PURPOSE

This meeting is held each day to discuss items regarding the Independent Soils Assessment at the Midland Plant, Units 1 & 2.

DISCUSSION

Status Items

Item 72-18 - Auxiliary Building Underpinning Activities.

Lagging placement in the drop pit for CT-12 has started.

Grouting in the drop pit for CT-1 has begun.

Pier E-12 was locked off yesterday.

Upward differential movement measured this morning at the W8 grillage has increased to 53 mils from 48 mils.

(INFORMATION ITEM)

Item 72-19 - Update on US Testing Corrective Action and Upgrading.

R. Cleary gave a status report on corrective actions and upgrading being undertaken by US Testing. Cross training is ongoing with a goal of qualifying 90% of US Testing technicians to at least 20 certifications. US Testing intends to have the two laboratory chiefs certified to at least Level I for key tests. The list of key tests is presently being formulated and should be available within the next few days. The format for preparation of work instructions has been approved. It is expected that issuance of work instructions will begin on 2/24/84 and be completed approximately 2 months thereafter. US Testing expects to have a Level II inspector certified to Level III today. All items from the original MPQAD audit are now closed. A rereview of US Testing by Bechtel is scheduled for April 1984. (WR 64, Pg. 1 remains OPEN) (INFORMATION ITEM)

Item 72-20 - CTL Report Evaluation of El. 685' Slab in the Control Tower.

The Assessment Team received the CTL report on their evaluation of cracking on the el. 685' slab in the Control Tower. (Item 70-2 remains OPEN)

(INFORMATION ITEM)

Independent Assessment of Bechtel's
Midland Plant Units 1 & 2
Furnace Power Control

Held at Midland Site
Midland, Michigan
February 2, 1984

New Items

No new items were discussed.

Response Items

Item 72-21- Distribution and Implementation of Controlled Documents.

R. Bradford discussed Bechtel procedures for distribution and implementation of controlled documents. Document control procedures provide for a formal transmittal/acknowledgement process in the distribution of documents between FSO and the subcontractors performing underpinning activities. The FSO document control station is considered part of Central Document Control and therefore no formal document transmittal procedure is required between the two stations. However, a Distribution/Transmittal Log is utilized for transmittal of documents from Central Document Control to FSO. This log is developed from the main document register and constantly updated. A review using sampling techniques will be performed at least once a month by FSO to verify documents are correctly incorporated into the FSO and the subcontractors document control stations. This presentation satisfactorily addresses the questions raised by the Assessment Team concerning distribution and implementation of controlled documents within the FSO. However, the Assessment Team is continuing its review of the transmittal process from Central Document Control. Bechtel responded that their Central Document Control supervisor will meet with the Assessment Team to discuss the document transmittal process.
(CLOSES ITEM 71-8) (OPEN ITEM)

Notes of Daily Meeting
Independent Assessment of Groundwater
Midland Plant Units 1 & 2
Consumers Power Company

Held at Midland Site
Midland, Michigan
February 1, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher

H. Clark

MPQAD

J. McMaster

H. Gave

M. Butterfield

Stone & Webster

L. Gervie

V. Palazzi

Persons

C. Oliveira

PURPOSE

This meeting is held each day to discuss items regarding the Independent Soils Assessment at the Midland Plant, Units 1 & 2.

DISCUSSION

Status Items

Item 72-22 - SWPS - Production Grouting.

J. Fisher reported that grouting on the east side of the SWPS has been completed. Excavation is scheduled to begin today. (INFORMATION ITEM)

Item 72-23 - Welding Procedures.

J. Fisher reported that the next revision to the Mergentime and Spencer White & Prentiss welding procedures is scheduled for issue on 2-8-84. (Item 72-12 remains OPEN) (INFORMATION ITEM)

Item 72-24 - QAP Review Program.

M. Butterfield provided an update on the subcommittee review of PQCI's and related construction procedures. Originally, the review encompassed expansion anchor installation and structural steel fabrication procedures & PQCI's. However, the review has now been expanded to include welding. A pilot program for the expansion anchor installation is in progress. The purpose of the pilot program is to evaluate the effectiveness of the new, unissued PQCI versus the current PQCI. Based on the effectiveness of the revised procedures & PQCI's referenced above, recommendations as to the feasibility of revising other procedures & PQCI's will be made to CP Co. (Item 64-7 remains OPEN) (INFORMATION ITEM)

New Items

Item 72-25 - MPQAD Tracking of NIR # 21.

J. McMaster stated that a QAR has been written to initiate action for the close out of NIR # 21. (INFORMATION ITEM)

Notes of Daily Meeting
Independent Assessment of Environmental
Midland Plant, Units 1 & 2
Consumers Power Company

Held at Midland Site
Midland, Michigan
February 3, 1984

Item 7a-20 - Recertification of Equipment and Tools.

J. Oliveira asked J. Fisher if a procedure existed for tracking the need for renewal or recertification of equipment and tools. J. Fisher will respond next week. (OPEN ITEM)

Response Items

No response items were discussed.

Minutes of MPOAD Meeting
Independent Association of
Midland Plant Units
Inshore River Company

Held at Midland City
Midland, Michigan
February 3, 1968

No MPOAD meeting was held this week.