



# STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

PRINCIPAL STAFF			
✓ SA	✓	INF	
C/FA		PCS	✓ orig +3
A/FA		PAO	
SEP		ELO	
		RC	
		FILE	✓

United States Nuclear Regulatory Commission  
 Midland Site Resident Inspection Office  
 Route 7  
 Midland, MI 48640  
 Attention Mr. R. Cook

June 17, 1983

J. O. 14358  
 Ref. MPF 38

RE: DOCKET NO. 50-329/330  
 MIDLAND PLANT-UNITS 1 AND 2  
 INDEPENDENT ASSESSMENT OF UNDERPINNING  
 REPORT NO. 38

A copy of the Independent Assessment of the Underpinning, Weekly Report No. 38 for the period June 5, 1983 through June 11, 1983 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) 589-2067).

Very truly yours,

*A. Stanley Lucks*  
 A. Stanley Lucks  
 Project Manager

Enclosures

ASL/pd

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 PDR FOIA  
 RICE84-96 PDR

JUN 23 1983

J. O. No. 14358  
Midland Plant  
Units 1 and 2  
Independent Assessment of Underpinning

Weekly Report No. 38  
June 5, 1983, through June 11, 1983

Personnel on Site

Stone & Webster Michigan, Inc.

W. Kilker	6/6	-6/11
P. Barry	6/6	-6/11
B. Holsinger	6/7	-6/11

Parsons, Brinckerhoff Michigan, Inc.

P. Parish	6/6	-6/10
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Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
6/6 through 6/10	Stone & Webster Bechtel Consumers Power Parsons	Daily Meetings

Activities

Construction

Pier KC11: The pier excavation, lagging and backpacking were completed. No groundwater entered the excavation. The subgrade was approved by the RGE and the mud mat was placed.

Pier E 8: Steel reinforcement and telltale instrumentation were installed up to the level of the pier hammerhead.

Pier E10: Upon removal of the formwork above E1 600 honeycombing effects in the concrete were noted in 3 of the pier corners approximately 4 ft down from the top of the pier. All honeycombed concrete was removed and the zones were repaired with grout. The lower leveling plate was installed.

Pier KC2: The pier excavation, lagging and backpacking were completed to E1580, a depth of 20 ft. No groundwater entered the excavation.

Pier W 8: The support of the bell area was completed and bottom mat and bell reinforcing steel were installed. Concrete was placed for the bell portion of the pier.

Pier W10: Shaft steel reinforcement was installed and the shaft concrete was placed. The pier lower leveling plate was installed.

SWPS: Work continued on the installation of deep probes, deep seated benchmarks, and soldier pile casings.

Quality Control, Documentation and Records:

1. Performed a surveillance of the concrete placement at the pier W10.
2. Verified the certifications of eight QC inspectors performing welding inspections.

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3. Reviewed Contractor's and MPQAD's decision to address and correct honeycomb concrete on pier E10.
4. Performed a QA surveillance of Standish Fabrication Shop and selected PQCI's, drawings and specifications to check for current revisions and appropriate change. The findings were compared to the MPQAD document control station and, in turn, to the plant central document control log.
5. Reviewed several welding Inspection Reports for accuracy, completeness and timely closure.
6. Reviewed 30 welding Inspection Reports to follow up on the procedural problems identified in the Assessment Team's NIR No. 11, on inspection of base metal repair.

#### Observation

Construction - Upon discovery of the honeycombed concrete in the pier E10, the Contractor implemented the necessary repair procedure. The inferior concrete was removed, a bonding agent applied to the exposed concrete and the voids were grouted. After a cure period the forms were removed revealing that the area had been properly repaired.

The Team's observation of the lagging, reinforcement and concrete installations at the various piers under construction indicated that the work was done in accordance with the requirements of the project documents.

The Assessment Team observed that the Contractor has decreased the diameter of the Hillbolts to permit shorter bolt embedment for bearing plate installations. This modification should minimize the bolt hole reinforcing bar interference problems that have plagued the work to date. These new bolts were used twice this week without any delay caused by rebar interference.

#### Quality Control, Documentation and Records -

1. The placement and vibration of concrete in Pier W10 was in accordance with project procedures, codes and good industry practice and produced a well consolidated mass of concrete.
2. Eight welding inspectors names were selected at random from completed inspection reports and compared to their certification date. All of those checked had performed inspection after the date on their certificate.
3. With reference to the honeycomb concrete discovered in Pier 10 the Assessment Team reviewed the project specifications and industry code requirements. The project specifications satisfy all of the code requirements. The Team concluded that the Contractor and MPQAD decision not to write a nonconformance report is correct.
4. The Assessment Team observed good craftsmanship and quality attitude at the Standish Fabrication Shop. Work area cleanliness and the storage area meet or exceeded the intent of industry codes. The weld rod station storage ovens and hermetically seals containers are kept in a locked cage.

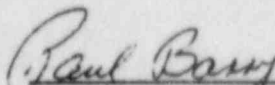
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5. The Inspection Report reviewed appeared to be accurate, complete and exhibited a vast improvement for timeliness of the supervisors review and closures.

6. The Assessment review of the 30 welding inspection reports did not show any further indication that required inspections for base metal repair being missed, as reported in NIR No. 11.

Nonconformance Identification Reports

All 11 previously identified NIR's have been closed out.

  
Project Engineer

  
Project Manager

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

Held at Midland Site Location  
Midland, Michigan  
June 6, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Gaydos J. Ross	-----	W. Kilker

Purpose

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

Discussion

Item 1 - Status of NIRs 6-8.

W. Kilker reported that NIRs 6-8 have been closed-out as acceptable. R. Sevo stated two of the Quality Action Requests will remain open until the proposed procedure and specification changes are made.

Item 2 - Work Status.

J. Fisher reported that pier E8 bell and pier E10 shafts were concreted June 3 and June 4, respectively. Piers W10 and W8 are in the process of reinforcing bar installation.

Item 3 - Hilti Bolt Test Program.

J. Ross reported the test program was completed and the data forwarded to Project Engineering for analysis.

Item 4 - Telltale Detail Change.

J. Fisher reported the lower telltale detail will change for future piers including E/W8 and KC piers. This change will result in a telltale with a free end as opposed to the existing fixed end.

Item 5 - Carlson Meter Encasement Change.

J. Ross said the WJE has determined that embedded lifting reinforcement and bolts may be affecting the meter readouts. These bolts and rods will be removed for future meter installations.

Item 6 - Discussion of Layback Grouting.

R. Sevo generated a discussion of grouting of the slope laybacks. J. Fisher said after grout viscosity adjustments on the east side placement, the west side placement proceeded quite well.

Items Requiring Resolution

None

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

Held at Midland Site Location  
Midland, Michigan  
June 7, 1983

Present For:

<u>Consumers Power.</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Gaydos N. Swanberg	W. Lydell	W. Kilker P. Barry B. Holsinger
			<u>Parsons</u> P. Parish

Purpose

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

Discussion

Item 1 - Construction Aid Guideline.

G. Murray stated that the guideline has been signed out and forwarded to Document Control.

Item 2 - Fox-Howlett Disassembly Inspection

J. Fisher said the inspection is being performed on piers under construction on one of every 100 assemblies as per the ASME requirement.

Item 3 - Carlson Meter Encasement and Hilti Bolt Test Program

N. Swanberg elaborated on the detail change in the encasement that is intended to improve the accuracy of response to applied loads.

Item 4 - Time Delay Requirements on Fox-Howlett Splice Testing

N. Swanberg advised that the 24-hour lab hold-time requirement was not intended for the splice testing now being performed.

Item 5 - Revised Work Schedule

J. Fisher advised that the field construction forces are now on the "rolling 4-10" time schedule.

Item 6 - Pier E10 Concrete Honeycomb

In response to a question by W. Kilker, J. Fisher and J. Gaydos explained the conditions that led to the concrete honeycomb effect in 3 corners of pier E10 approximately 4 ft. down from the top of the pier. J. Fisher explained that the approved concrete repair procedure would be implemented to do the repairs.

Items Requiring Resolution

None

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

Held at Midland Site Location  
Midland, Michigan  
June 8, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Gaydos N. Swanberg J. Kelleher	R. Sevo	W. Kilker P. Barry B. Holsinger
			<u>Parsons</u> P. Parish

Purpose

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

Discussion

Item 1 - Audit Report on U. S. Testing.

W. Kilker reported that according to MPQAD the report will be issued next week.

Item 2 - Carlson Meter Calibration.

N. Swanberg said that the encased Carlson meters will be calibrated on-site prior to placement in the piers. The information will be used by engineering in evaluating the meters in-service response.

Item 3 - Concrete Workability.

P. Barry questioned why the concrete placed to-date in the underpinning work has been at or on the low side of the 3 inch design slump instead of using concrete of up to 5 inches slump, the rejection limit. J. Gaydos replied that the Project Engineering design mix is for 3 inches and that going over this slump is considered an inadvertency. That is, the intent is to avoid going over slump.

Items Requiring Resolution

None

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

Held at Midland Site Location  
Midland, Michigan  
June 9, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
R. Wieland	J. Fisher N. Swanberg V. Verma J. Gaydos M. Blendy D. Lavelle	R. Sevo	P. Barry  <u>Parsons</u> P. Parish

Purpose

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

Discussion

Item 1 - Carlson Meter Correlation.

Four concrete encased Carlson meters were sent to WJE in Chicago for correlation testing to ensure that the meters would be available for placement in pier E8. Other Carlson meter encasement correlations will be performed on-site by U.S. Testing.

Item 2 - Pier E8 Progress.

Carlson meter encasement correlation testing is the critical item necessary for pier E8 concrete placements. Tell-tale fabrication and QC availability for rebar welding inspection are also required to complete the work.

Item 3 - Pier W10 Bell Tolerance.

P. Barry requested a clarification discussion on a condition that led to correcting the bell dimension on pier W10 during rebar placement. J. Fisher explained that the bell dimension tolerance deviation on pier W10 was noticed because of inadequate clearance for mat reinforcement and caused by jacking an additional soil support plate at the center of the bell span. This jacking caused the plate to curl at the edges and reduced inside clearance. Resolution was made by trimming the excavation as necessary and jacking at the plate edges as well as the center.

Items Requiring Resolution

None



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

Held at Midland Site Location  
Midland, Michigan  
June 10, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Gaydos	-----	P. Barry W. Kilker B. Holsinger
			<u>Parsons</u> P. Parish

Purpose

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

Discussion

Item 1 - Carlson Meter Calibration.

J. Fisher reported that Project Engineering has requested that all Carlson Meter encasements be load calibrated prior to insertion in the respective piers.

Item 2 - "Road-Map" Meeting.

J. Fisher announced that next week the Subcontractor will conduct a "road-map" discussion on the installation of the NS bulkhead at Pier E/W8 and excavation methodology of two mass excavation areas.

Item 3 - Concrete Agitation.

In response to discussions held on-site earlier this week concerning requirements for constant concrete agitation ( in the delivery truck), P. Barry stated that the Assessment Team had reviewed code requirements, project documents and site practices. The Team agrees with the owners' position that the applicable ASTM and ACI codes do not require constant agitation of the mixed concrete prior to placement. With respect to site practices, the Assessment Team's observations of numerous concrete placements over the past 6 months indicate that, in general, the delivery truck drums are maintained at slow rotation speed. Only on rare occasions have the drums been stationary and then for only very short periods of time. The Assessment Team feels the present site practice meets the intent of the codes, project documents, and good construction practice.

Items Requiring Resolution

None