

STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

United States Nuclear Regulatory Commission  
Midland Site Resident Office  
Route 7  
Midland, MI. 48640

Attention Mr. R. Cook

DOCKET NO. 50-339/330  
MIDLAND PLANT UNITS 1 & 2  
INDEPENDENT ASSESSMENT OF UNDERPINNING  
REPORT NO. 52

September 20, 1983

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A copy of the Independent Assessment of Underpinning Weekly Report No. 52 for the period of September 11, 1983 through September 17, 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.

By Maj. L. for

A. Stanley Lucks  
Project Manager

Enclosures  
ASL/pd

SEP 23 1983

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

Weekly Report No. 52

September 11, 1983 through September 17, 1983

Personnel on Site

Stone & Webster Michigan, Inc.

A. Scott	9/11 - 9/17
W. Kilker	9/12 - 9/14
B. Holsinger	9/13 - 9/17
P. Majeski	9/13 - 9/17
J. Springer	9/17

Parsons, Brinckerhoff Michigan, Inc.

F. Balsamo	9/12 - 9/16
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Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
9/12 - 9/16	Stone & Webster Bechtel Consumers Power Parsons	Daily Meetings
9/16	Stone & Webster Bechtel Mergentime Consumers Power	Road Map Meeting for Load Transfer at E/W8 Grillage
9/14	Stone & Webster Bechtel Mergentime Consumers Power	Bechtel-Mergentime Scheduling Meeting
9/14	Stone & Webster(Part time) Bechtel Consumers Power	Engineering and Construction Coordination Meeting
9/14	Stone & Webster MPQAD	Weekly Meeting with MPQAD

Underpinning and Remedial Soils Activities

E8 Grillage: The installation of the grillage is nearly complete.

Pier Kc10: The upper leveling plate, jackstands and jacks are installed.

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Pier Kc10 to 11 Drift: The drift excavation and support is complete.

Pier E14 Drift: The drift excavation and support is complete. Reshore member installation initiated.

W8 Grillage: The installation of the grillage is complete and the jacks were reactivated beneath the turbine building in the evening of 9/17 in preparation for load transfer to the grillage on 9/18.

Piers Kc2 to 3 Drift: Excavation of concrete in this drift continued.

Pier W14 Drift: The drift excavation and support is complete. Reshore member installation initiated.

UAT: The grouting of the soils adjacent to the UAT's commenced.

SWPS: The installation of the header system on the interior wells of the SWPS/CWPS are complete. Exterior well and soldier beam installation continued.

BWST: The outstanding NCR's are in the process of disposition. Work is expected to resume in the near future.

#### Assessment Team Observations-Construction

Because of some last minute delays, the start of load transfer at the W8 grillage, which had been scheduled for the morning of 9/17, was delayed to the evening. The contractor prudently elected to only reactivate the jacks under the turbine building, and postpone loading the grillage to the morning of 9/18. This would allow a fresh start and put the critical loading increments at mid-day when engineering support and other resources would be more readily available to resolve any problems that may arise. The re-activation of the jacks beneath the turbine building was executed in an orderly and meticulous manner.

The craftsmanship observed by the Assessment Team for the grillage beam field fabrication is considered to be of superior quality. The attitude and cooperation of the craftspeople are exemplary.

The Contractor has noted that the presently activated elements of the dewatering system at the SWPS are more effective than had been anticipated during the design of the system. It is planned to test the system in the near future to determine if the required drawdown can be achieved without installation of a significant number of Phase II wells. This action by the Contractor demonstrates a timely evaluation of data, which in this case can result in considerable cost savings, while still meeting design requirements.

#### Assessment Team Observations-QA/QC

1. A review was made of the training records of 38 QC inspectors to determine if they were properly certified. The 38 inspectors were found to be properly certified.

2. The PQCI for Load Transfer at the Pier E/W8 Grillage Beams was reviewed for adequacy to the project specifications and procedure. The PQCI reflects the requirements correctly and includes all of the necessary requirements.

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In addition, the certifications of three inspectors were checked for this PQCI and found to be up to date. During this review, it was noted that training to this PQCI was waived because of the similarity of the PQCI to that for load transfer to individual piers. Due to the similarity of the operations, the Assessment Team believes that this action was acceptable.

#### Work Activity Packages

Work Activity Package WAP-56 was reviewed and found to be complete.

#### Nonconformance Identification Reports

<u>NIR No.</u>	<u>Description</u>	<u>Date</u> (Opened) ( Closed)
14	Nut Procurement	8/11/83

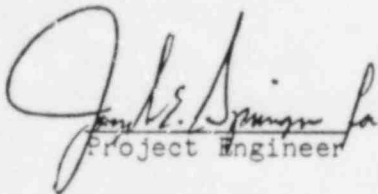
#### Open Items

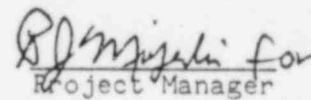
The following is a listing of all open items from the Daily Meeting Notes with Bechtel and the Weekly Meeting with MPQAD. Carry-over items from past weeks which have been closed out this week are also listed.

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
45-8Q	Discussion on Mechanism of Identifying Quality Concerns.	Open
48-4Q	Structural Backfill PQCI Adequacy	Open
49-8	Impact on Welding Nonconformance on E/W8 Grillage Installation	52-13
50-15	Concrete Spacers	52-3
50-24	Need for Additional Welding Qualifications ( See Item 49-8 )	52-13
W.R. 50.pg.2	Review of MPQAD Certification	W.R.52
51-12	Method of SWPS Bell Support	52-4
51-13	Request for Clarification of the Drainage Detail for SWPS Lagging	Open
W.R.51.pg.4	Control Document Evaluation	Open
52-4Q	MPQAD Independent Welding Inspection Review	Open

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<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
52-22	Reschedule Work on BWST	Open
52-26	Signoff for Lead Design Organization on NCR's	Open

 J. S. Springer for W.E. KILKER  
Project Engineer

 R. J. Mijeli for AS Lucks  
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  
September 12, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher	R. Sevo	A. Scott
	E. Cvikl		W. Kilker
	J. Gaydos		
			<u>Parsons</u>
			None

Purpose

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

Discussion

Item 52-1: SWPS Status.

J. Fisher reported the interior well and a portion of the exterior well dewatering system should be activated within the next 2 weeks. ( CLOSED ITEM )

Item 52-2: BWST Status.

After a general discussion of the status of NCRs, J. Fisher stated a FSO representative would provide a status update on BWST items on 9-13-83. ( OPEN ITEM )

Item 52-3: Pier KC10 Bar Chair Spacers.

In response to a previous discussion ( Daily Meeting Notes Item 50-15 of 9-1-83 ) concerning the displacement of several re-bar chairs during concrete placement, J. Fisher noted that Mergentime has been cautioned to maintain closer surveillance of these support items. ( CLOSES OUT ITEM 50-15 )

Item 52-4: SWPS Bell Lagging Support.

E. Cvikl responded to a previous question ( Daily Meeting Notes Item 51-12, 9-8-83 ) concerning the stability of bell lagging during installation. The lagging sets and spacers will be strapped together as the excavation proceeds downward. Stability with respect to rotating or tilting will be insured by the bolted set rigidity, ( CLOSES OUT ITEM 51-12 )

Item 52-5: Inter-pier Lagging Length.

The Assessment Team questioned how the end void space will be filled that is created by the installation of the overlapped lagging between piers. FSO will investigate. ( OPEN ITEM )

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

Held at Midland Site Location  
Midland, Michigan  
September 12, 1983

Item 52-6: Impact of Revised NCRs Issued on Programmatic Items.

There was a discussion on the impact of a NCR written on an item such as conflicting code requirements that pertain to a specific item such as calibration records. That is, would this type of NCR impact the work activity just as though it were written on a "hardware" item. MPQAD will respond. ( OPEN ITEM )

Item 52-7: SWPS Abandoned Well Subsidence NCR.

R. Sevo questioned if the disposition of the NCR written on the ground subsidence adjacent to the SWPS would require further work. E. Cviki reported the Engineering disposition would be to require a sheeted pit to investigate the nature of soil support in the vicinity of the foundation. ( CLOSED ITEM )

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

Held at Midland Site Location  
Midland, Michigan  
September 13, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher	R. Sevo	A. Scott
R. Wieland	E. Cvikl		W. Kilker
	J. Gaydos		P. Majeski
	D. Lavelle		B. Holsinger
	J. Nation		<u>Parsons</u>
			F. Balsamo

Purpose

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

Discussion

Item 52-8: BWST Status Update.

J. Nation reported that a group of 6 NCRs written on anchors, bolts and reinforcing steel have resulted in a virtual halt to the foundation repair work. However, FSO intends to have disposition on 3 of the items within 2 days and is coordinating with MPQAD to seek the resolution of 2 NCRs. An additional update will be provided later this week. ( OPEN ITEM )

Item 52-9: Status of UAT Work.

J. Fisher reported that grouting has begun on the soils adjacent to the west UAT. Final QC inspection of the stiffener/platform welding will be delayed pending the grouting progress. ( CLOSED ITEM )

Item 52-10: Auxiliary Building Piezometers.

J. Fisher stated that the slab coring is nearing completion and that the piezometer installation will start on 9-19-83. ( CLOSED ITEM )

Item 52-11: SWPS Status Update.

J. Fisher reported that by 9-19-83 all accessible phase I wells and soldier piles should be installed. The remainder must await the completion of the Train A service waterline repair and testing. ( CLOSED ITEM )

Item 52-12: Activation of SWPS Dewatering.

J. Fisher said the plan is to activate the interior wells and the installed exterior wells with the next 2 weeks to test the drawdown. If the groundwater level is lowered sufficiently, the number of Phase II dewatering wells can be greatly reduced. ( CLOSED ITEM )

Item 52-13: Weld Pre-qualifications.

In response to an Assessment Team question J. Fisher distributed a memo describing the additional weld pre-qualifications required to perform the Auxiliary Building and SWPS Underpinning work. All qualifications



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

Held at Midland Site Location  
Midland, Michigan  
September 13, 1983

should be complete within 2 weeks. ( CLOSES OUT ITEMS 49-8 and 50-24 )

Item 52-14: SWPS Pier Lagging Drainage Detail.

J. Fisher and E. Cviki responded to an Assessment Team question ( refer to Notes of Daily Meeting of 9-8-83, Item 51-13 ) concerning drainage behind the SWPS pier lagging. J. Fisher stated the detail shown on the drawing is a suggested method-not a requirement. The RGE can approve an alternate scheme, as was done in the case of the auxiliary building piers. The reference on the drawing detail to "non-Q" material will be eliminated.  
( CLOSES OUT ITEM 51-13 )

Item 52-15: Groundwater Seepage at East Access Shaft.

A. Scott questioned what is being considered to stop the groundwater seepage into the SE corner of the shaft. J. Fisher replied that this seepage has followed the excavation downward. Attempts at grouting and to locate the source have not been successful to date. A well-point installation is being considered but no definite proposal has been made. J. Fisher will follow-up.  
( OPEN ITEM )

Item 52-16: Clarification of Programmatic Non-Conformance Identification.

R. Sevo stated that a QAR is issued for a programmatic nonconformance such as conflicting code requirements. However, if a programmatic nonconformance affects installed hardware, a NCR may also be required until resolution of the QAR is obtained. ( CLOSES ITEM 52-6 )

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

Held at Midland Site Location  
Midland, Michigan  
September 14, 1983

Present For;

Consumers Power

R. Wieland

Bechtel

J. Fisher

E. Cvikl

J. Gaydos

D. Lavelle\*

MPQAD

R. Sevo

Stone & Webster

A. Scott

W. Kilker

P. Majeski

Parsons

F. Balsamo

\* Part Time

Purpose

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

Discussion

Item 52-17 - Load Transfer on E/W - 8 Grillage.

J. Fisher indicated that load transfer on the W8 Grillage is scheduled for September 18, 1983 and the E8 Grillage on September 19, 1983. ( CLOSED ITEM )

Item 52-18 - Status of Level "C" Wales.

Before work can be restarted, shop drawings for wale fabrication must be completed and resolution of a problem with MCP 46 must be accomplished. The work is scheduled to start by the middle of next week. ( CLOSED ITEM )

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

Held at Midland Site Location  
Midland, Michigan  
September 15, 1983

Present For;

Consumers Power

G. Murray  
R. Wieland

Bechtel

J. Fisher  
E. Cvikl  
J. Gaydos  
J. Nation\*

MPQAD

R. Sevo

Stone & Webster

A. Scott  
W. Kilker  
P. Majeski

Parsons

F. Balsamo

Part Time \*

Purpose

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

Discussion

Item 52-19 - Grillage Beam Load Transfer Road Map Meeting.

J. Fisher indicated that a road map meeting is scheduled for September 16.  
(CLOSED ITEM )

Item 52-20 - Lean Flyash Mix.

J. Fisher indicated that the lean flyash mix would be used in a piezometer today. (CLOSED ITEM )

Item 52-21 - BWST Status Update.

The 6 NCR's written against this work will be dispositioned by tomorrow.  
( CLOSES ITEM 52-2 and 52-8 )

Item 52-22 - Reschedule Work on BWST.

J. Nation to reschedule work on BWST. Schedule to be provided in a future meeting. (OPEN ITEM)

Item 52-23 - Seepage on East Side.

J. Fisher indicated that they intend to control the seepage on the east side by installing a pipe to collect the water and divert it to a pump for ultimate disposal. ( CLOSES ITEM 52-15 )

Item 52-24 - Inter-Pier Lagging Length.

J. Fisher indicated that the void space caused by the long overlap will be filled with grout. ( CLOSES ITEM 52-5 )

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

Held at Midland Site Location  
Midland, Michigan  
September 16, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher	None	A. Scott
	J. Darby		P. Majeski
	D. Lavelle		
	J. Gaydos		<u>Parsons</u>
			F. Balsamo

\* Part Time

Purpose

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

Discussion

Item 52-25 - Grillage Beam Load Transfer.

Load transfer for the grillage at W8 is to start on September 17, 1983 and at E8 on September 18, 1983. ( CLOSED ITEM )

Item 52-26 - Signoff for Lead Design Organization on NCR's.

P. Majeski asked for the policy on signature authority for the Lead Design Organization on NCR's. J. Darby stated that N. Swanberg has delegated authority to E. Cvikel, J. Darby and other individuals to permit timely signoff of NCR's. The Memo delegating this authority will be furnished to the Assessment Team. ( OPEN ITEM )

Item 52-27 - Issuance of PEP 4.46.1.

J. Darby indicated that PEP 4.46.1 was issued on August 15, 1983. This document provides the criteria for mandatory reissue of drawings based upon the number of outstanding document changes. ( CLOSED ITEM )

Item 52-28 - Work Activity Package 56.

P. Majeski indicated that our review of Work Activity Package 56 is complete. The Assessment Team has no comments or concerns. ( CLOSED ITEM )

Notes of MPQAD Meeting  
Independent Assessment of Underpinning  
Midland Plant Units 1 & 2

Held at Midland Site Location  
Midland , Michigan  
September 14, 1983

Present For:

Stone & Webster

B. Holsinger  
W. Kilker  
P. Majeski

MPQAD

J. Meisenheimer  
D. Horn  
R. Oliver

Purpose

This meeting is held to obtain and discuss information relative to Q.A. activities for soils underpinning work at the Midland Plant Units 1 & 2.

Discussion

Item 52-1Q - Status of NIR # 14.

MPQAD has written an NCR to address the nonconforming condition, determination of the root cause is in-process. ( CLOSED ITEM )

Item 52-2Q - Status of Adequacy of PQCI For Structural Backfill.

MPQAD indicated that the PQCI has been revised and is available in draft form to the Assessment Team . ( CLOSED ITEM )

Item 52-3Q - Status of Mechanism of Identifying Quality Concerns.

MPQAD stated a draft procedure is out for review by a steering committee. The procedure should be similar to the old QAR system. No projected date for completion. ( CLOSED ITEM )

Item 52-4Q - MPQAD Independent Welding Inspection Review.

The Assessment Team requested a summation of the independent welding inspection review, when completed. ( OPEN ITEM )

7. S&W CIO Reports

The inspectors reviewed the weekly reports No. 10 through 14 (attached) submitted by S&W to document the results of the independent assessment of the Construction Completion Program (CCP). No significant concerns were identified in these reports.

8. Exit Interview

The inspectors met with licensee representatives at the conclusion of the inspection. The inspectors summarized the scope and findings of the inspection. The licensee acknowledged the information.

Attachments:

1. Stone and Webster Engineering Corporation Weekly Independent Assessment of Underpinning Reports 48-52
2. Stone and Webster Engineering Corporation Overview of the Construction Completion Program Reports 10-14