STONE & WEBSTER MICHIGAN, INC.

P.O. BOX 2325, BOSTON, MASSACHUSETTS 02107

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

June 2, 1983

J.O. No. 14358
Ref. MPF 36

Attention Mr. R. Cook

RE: DOCKET NO. 50-329/330
MIDLAND PLANT - UNITS 1 and 2
INDEPENDENT ASSESSMENT OF UNDERPINNING
REPORT NO. 36

A copy of the Independent Assessment of the Underpinning Weekly Report No. 36 for the period May 22, 1983 through May 28, 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).

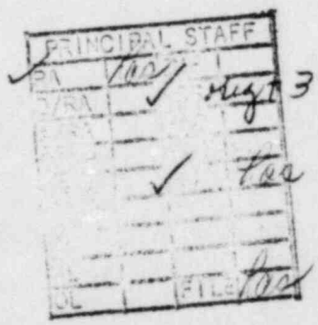
Very truly yours,

W E Kelley for A S Lucks

A. Stanley Lucks
Project Manager

Enclosures

ASL/ka



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

Weekly Report No. 36

May 22, 1983 through May 28, 1983

Personnel on Site

Stone & Webster Michigan, Inc.

W. Kilker	5/23 - 5/28
B. Holsinger	5/23 - 5/26
P. Barry	5/23 - 5/27

Parsons, Brinckerhoff Michigan, Inc.

J. Ratner	5/23 - 5/28

Meetings Attended

Date	Represented	Purpose
5/24 through 5/26	Stone & Webster Bechtel Consumers Power Parsons	Daily Meetings
5/25	Stone & Webster Bechtel Consumers Power U.S. Testing	Audit Exit Meeting
5/27	Stone & Webster Bechtel Consumers Power	Bi-Weekly Soils Review

Activities

Construction -

KC11 Drift: The existing layback areas were formed in preparation for back-filling with grout.

Pier E8: The bell excavation and steel plates, frame, and strut support system for the bell was completed and installed. Once started, the belling and support installation continued virtually uninterrupted. The clay till remained stable during excavating and virtually no groundwater seepage entered the bell area. Minor voids behind the steel plating were grouted through prefitted holes in the plating. The steel plates were installed in stages as the bell excavation progressed, limiting exposure of the bell area soils.

Pier E8 Drift: The slope layback area at the west end of the pier E8 drift was formed in preparation for filling with grout.

Pier E10: The bell excavation was completed and supported with steel plates and struts. Bottom mat and bell area reinforcing steel were installed and concrete placed to El. 572, near the top of the bell as indicated on the drawings.

KC2 Drift: Form work for grouting the existing slope layback was completed.

Pier W8: The shaft area was completed to founding grade, El. 565. Minor seepage continued to enter the excavation at the fill/natural soil interface. The slope layback at the east end of the pier drift was formed in preparation for grout placement.

Pier W10: The bell area was excavated and supported by steel plates and struts. Grouting of void spaces behind the sheeting is in progress. Minor seepage continued to enter excavation from the higher elevation zones described in Weekly Reports #34 and 35.

Pier E/W9: Non-routine rejacking of these piers was performed to assess the effect of the turbine building underpinning support system on the adjacent portions of the EPA structure.

Quality Control, Documentation and Records:

1. Reviewed 8 welding and 15 stud welding inspection reports for accuracy and completeness.

2. Assessed MPQAD follow-up on the finding of an internal audit on U.S. Testing.

3. Reviewed ASME requirements for disassembly testing of Fox-Howlett couplers.

Observations

Construction - The excavation and support of the bell areas in piers E/W8 and E/W10 was performed in accordance with the project documents. The Contractor plans to proceed with bell construction in piers E/W8 on a nominal round-the-clock basis until completion. The Assessment Team feels this action will significantly contribute to the timely completion of the piers in accordance with good underpinning practice.

Quality Control, Documentation and Records - With the exception of one report (identified in NIR #11 issued May 26, 1983) the Assessment Team review indicated the welding and stud welding QC inspection reports were complete, accurate and had been properly reviewed. NIR #11 was issued when the Assessment Team found that in one case the final visual inspection of a repair had not been performed prior to closing the inspection report. Upon notification, MPQAD assisted in determining the cause of the finding, opened a new inspection report to do the required inspection, retrained the inspectors involved, and issued clarified instructions to prevent a reoccurrence. Based on these actions taken by MPQAD the NIR was issued as closed on May 27, 1983.

J.O. No. 14358
Midland Plant
Units 1 and 2
Independent Assessment of Underpinning 3

After attending the exit meeting on the audit of U.S. Testing, the Assessment Team raised a question concerning MPQAD's follow-up to the certification finding. MPQAD replied that after the internal U.S. Testing review of the certifications, the MPQAD auditors reviewed the valid certifications to determine compliance. The Assessment Team concurred that this follow-up action taken was sufficient.

The Assessment Team review of the ASME requirements on coupler disassembly inspections determined that the inspection is clearly detailed in a 1980 addendum to ASME Section III, Division 2 and that if the Contractor proposes to wave this inspection a change in the SAR would likely be required.

Design Work Packages - An overview of six design work packages was performed by the Assessment Team. After an initial review, the Assessment Team submitted comments and questions to the Contractor's Constructability Grou for resolution. All comments were addressed and questions resolved and in the opinion of the Assessment Team the following work packages meet the necessary accuracy and adequacy requirements:

Excavation and temporary backfill for Service Water pipe, BWST Foundation Repair, Exploratory Excavation for ILRT Ductbank, SWPS Dewatering System Installation, SWPS Soldier Beam Installation, and E/W 13/14 Piers and Zone Excavations.

NonConformance Identification Reports

Status of previous issues: (NIR numbers no longer listed have been closed-out.)

NIR No.	Description	Date (Opened)	(Closed)
5	Concrete Mix Qualification	2/10/83	5/25/83
6	Lagging Spacers	3/21/83	
7	Backpacking Material in Wet areas-Pier W11	4/5/83	
8	Load Transfer Methodology - Pier E12	4/5/83	
9	Release of Pier W9 for Load Transfer	4/13/83	5/25/83
10	Verification of Vibrator Frequency	4/21/83	5/25/83
11	Base Metal Repair Inspection Report	5/26/83	5/27/83

Project Engineer

Project Manager

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

May 23, 1983

No meeting was held on this date.

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

Held at the Midland Site Location
Midland, Michigan
May 24, 1983

Present For:

Consumers Power	Bechtel	MPQAD	Stone & Webster
G. Murray	J. Gaydos	R. Sevo	B. Holsinger
	J. Fisher		P. Barry
	E. Cvikl		W. Kilker
			Parsons
			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 1 - Status of on-going work.

J. Fisher reported that the drift to KC2 pier should resume shortly now that a change request on laybacks on this drift has been resolved. The drift to pier KC11 is still held pending resolution of a change request to modify a reshore member. Pier E8 belling may start today while pier W8 bell work may commence near the end of the week. The Contractor is prepared to perform the belling operations on a continuous basis to support the concept of minimizing risk of bell failure.

Item 2 - Status of PQCI and certification with respect to layback filling.

R. Sevo stated that it is likely the existing certifications and PQCI's will be adequate to control the quality aspects of the layback filling. Due to the similarity of the proposed work to existing grout installation techniques the proper inspection status can be achieved by reciprocity from the existing documents.

Item 3 - Status of NIRs.

W. Kilker reported that the Assessment Team has received replies on NIRs #5, 9 and 10.

Item 4 - Resolution of welding concerns.

J. Fisher said that based on the meeting of May 20 fabrication tolerances will be delineated on vendor drawings.

Item 5 - Rejacking of piers E/W9

P. Barry asked why piers E/W9 were rejacked on May 23. E. Cvikl said neither the pier nor building settlement initiated the procedure but rather it was done to determine if the turbine pier load would have any effect on settlement of the close portion of the EPA as monitored by a nearby benchmark.

Item 6 - Status of Fox-Howlett coupler disassembly NCR.

G. Murray asked about the NCR on Fox-Howlett couplers. R. Sevo said that the specification had required a disassembly examination of one of every 100 couplers but that the construction procedure had not included that requirement. Resolution will likely be to require the examination.

Item 7 - Pier W10 water problems.

W. Kilker asked for a summary of the pier W10 water related problems. J. Fisher said that there was the problem of movement of granular fill into the pier excavation above El. 585. The resulting void was subsequently grouted. In the vicinity of El. 575 a substantial quantity of water piped into the excavation hypothetically through a silt zone between piers 9 and 10. The small void was layered with gravel & grout and spiling installed to prevent collapse of any material into the upcoming bell excavation.

Item 8 - Closure of NCRs and FCRs.

B. Holsinger stated that the May 20 meeting of all concerned parties was in the view of the Assessment Team quite successful - numerous outstanding FCRs and NCRs were resolved or dispositioned. The Assessment Team would expect a similar degree of diligence be maintained at all times in the future to prevent having to operate in the crisis atmosphere of last week.

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

Held at the Midland Site Location
Midland, Michigan
May 25, 1983

Present For:

Consumers Power	Bechtel	MPQAD	Stone & Webster
G. Murray	J. Fisher	J. Shah	W. Kilker
	E. Cvikl		P. Barry
	M. Blendy		B. Holsinger
	J. Kelleher		
	N. Swanberg		

Parsons

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 1 - Layback fill schedule.

J. Fisher reported that the concreting of the existing laybacks is scheduled for May 27.

Item 2 - Reanalysis of Temporary Support System.

N. Swanberg gave a brief description of progress on reanalysis of the temporary underpinning support without the laybacks.

*Item 3 - Construction Aid Procedure.

G. Murray will verify status of construction aid procedure sign-off.

Item 4 - Status of NIRs 5, 9 and 10.

P. Barry reported 3 NIRs (Nos. 5, 9, & 10) have been closed out by the Assessment Team.

Item 5 - Fox-Howlett Disassembly Requirements.

J. Fisher said the Engineering disposition of the installed Fox-Howlett couplers was to accept as-is based on the 100 percent QC inspection performed. The disassembly requirement for future installation is under review.

Item 6 - E/W8 pier Bell Work Schedule.

J. Fisher said the work once initiated on the E/W8 pier bells will proceed on an around the clock basis.

*Item 7 - Access Shaft Wale Installation Detail.

P. Barry and E. Cvikl will visit the buttress access shafts to resolve a question on the work package submittal on access shaft lower wale installations.

Item 8 - SWPS Soldier Pile Backfilling.

P. Barry asked if lean mix flyash for SWPS soldier pile encasements requires a mix qualification as per ACI. N. Swanberg replied that this material is a backfill and therefore not subject to qualification by ACI standards.

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

Held at the Midland Site Location
Midland, Michigan
May 25, 1983 (Page 2 continued)

Item 9 - Anchor Bolt Field Test Program.

J. Kelleher reported that field tests on anchor bolts will be performed May 27. The test program is to provide data for upcoming discussion on re-evaluating the required torque values for anchor bolts.

Item 10 - Work Schedule on SWPS.

J. Ratner questioned why work on the SWPS seems to have virtually stopped. J. Fisher said that procedure changes are needed to designate 5 of the 6 recently drilled holes as piezometers rather than wells. Additional SWPS work needs NRC approval prior to release.

*Items requiring resolution

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

Held at the Midland Site Location
Midland, Michigan
May 26, 1983

Present For:

Consumers Power	Becthel	MPQAD	Stone & Webster
G. Murray	J. Fisher	R. Sevo	W. Kilker
R. Weiland	E. Cvikl		P. Barry
	M. Blendy		B. Holsinger
	N. Swanberg		
	D. Lavelle		
	J. Gaydos		

Parsons

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 1 - Potential Effect of Generic QA Programmatic change on Issue of Future PQCI's.

R. Sevo stated that QC may have a problem supporting the layback grouting this week due to a MPQAD commitment to establish certain new overall plant procedures. In the meatime QA/QC Soils maybe impacted. R. Sevo will verify.

*Item 2 - Responses to NIR #6 & 7.

E. Cvikl provided responses to the QARs generated as a result of NIR #6 and 7. W. Kilker will review and respond.

Item 3 - Fox-Howlett Disassembly Inspection Requirements.

J. Fisher reported that the procedure will be modified to include the disassembly inspection of one out of every 100 units on the upcoming rebar installations. Engineering will in the meantime pursue the long-term resolution of this finding.

Item 4 - Pier E10 completion.

J. Fisher reported a delay in the release of lower leveling plate anchor bolts may result in a seperate concrete placement for the bell area.

Item 5 - Comment on Work Schedule.

J. Fisher reported that June 6 is being considered for a start date on increasing the underpinning work schedule via the rolling 4-10 plan. W. Kilker stated that clearly the Assessment Team has no involvement in the decision or official opinion on this decision. However, the Contractor should realize that the Assessment Team may produce a critical evaluation of the upcoming effort if this increased work schedule simply means that certain work activities are completed quicker only to be delayed longer before being allowed to continue on subsequent activities.

*Item 6 - U.S. Testing Audit Findings.

G. Murray reported that CPCo had met with the NRC on-site to discuss the findings.

B. Holsinger asked if based on the nature of the audit findings, MPQAD would deem it necessary to participate with U.S. Testing on any follow-up investigation. R. Sevo will advise.

Item 7 - Grout Type.

R. Wieland stated that the manufactures's representative for masterflow grout mix has been contacted concerning the use of the material as a dry-pack or flowable grout. The topic is scheduled for discussion in the Soil's Weekly Review meeting.

*Item 8 - Pier Bell Bond Breaker Material.

J. Ratner questioned why on the drawings certain pier bond breaker material is designated as a certain type while on others it is designated simply as bond breaker. N. Swanberg will resolve.

Item 9 - Access Shaft Inspection.

J. Ratner asked if there was a long-term routine inspection plan for the access shaft lagging. J. Fisher replied that the field personnel now perform periodic checks of backpacking which involves a close-up view of the lagging. A long-term inspection plan, however, would not be considered until the lagging had been in-place for at least a couple of years.

* Items require resolution

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

May 27, 1983

No meeting was held on this date.