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

Weekly Report No. 80

March 25, 1984 through March 31, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	3/27 - 3/31
D. Benvie	3/26 - 3/31
D. Zito	3/26 - 3/30
L. Rouen	3/25 - 3/27

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	3/27 - 3/31
B. Metros	3/25 - 3/27

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
3/19 - 3/23	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting
3/19	Consumers Power Bechtel MPQAD Stone & Webster	Inter-organizational Meeting

Underpinning and Remedial Soils - Construction

Pier Kc4: Load transfer for the pier was completed. Routine rejackings are in progress.

Pier E/W16: Installation of the upper leveling and bearing plate assemblies has been completed. The jackstand installation is in progress for both piers.

Piers CT1/12: Installation of the transfer frames is in progress.

Kc3 to Kc4 Drift: Installation of steel reinforcement for the drift invert mudmat is in progress.

Kc10 to Kc9 Drift: Installation of steel embedments for the drift invert mudmat is in progress.

Access Shaft Level "C" Wales: Installation of plates for support of the Level C Wales is in progress on both the east and west shafts.

SWPS: Installation of the upper level wale is in progress.

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

Assessment Team Observations - Construction

The Assessment Team observed the ongoing installation of the transfer frames for piers CT1/12. Work completed to date includes setting the stabilizer plate and rockbolts into place, placement of the lower leveling and bearing plates, installation of the steel collar drift frame, placement of grout for the steel collar frame mudmat and setting the major transfer frame components into place. All concrete surfaces were roughened and moistened for 24 hours in accordance with procedures. Grout placement for the steel collar frame mudmat was continuous avoiding segregation and bleeding. Erection and splicing required to set the steel collar drift frame into place was accomplished in accordance with the procedures. Despite the confined working area, the Contractor was able to move the transfer frame beams and posts into place without damaging the transfer frame members or the appurtenant components that have already been installed. It is the opinion of the Assessment Team that installation of the transfer frames performed to date has been accomplished in accordance with project procedures and good construction practice.

Assessment Team Observations - QA/QC

The Assessment Team reviewed the design drawings assigned to the UAT work print station of the Auxiliary Building underpinning. The review consisted of checking the drawings for proper revision number, proper posting of attachments, legibility and proper identification stamps. Four deficiencies were found with respect to posting of attachments and drawing revisions. As a result, NIR No. 24 was issued. The deficiency rate was less than 2 percent of the total attributes considered. However, the Assessment Team recommends the Contractor should put forth additional effort to maintain the documents properly. During the review of this work print station, two additional drawings were posted that were not shown on the internal distribution list. The Contractor was informed and these drawings were added to the list.

Compressive strength testing for piers CT1/12 concrete cylinders at the US Testing Laboratory was overviewed by the Assessment Team. Curing and capping of cylinders was accomplished in accordance with project procedures. During load application, the US Testing technician performing the test did not use the maximum load indicator on the pressure gage as required by ASTM procedures. As a result, the Assessment Team issued NIR No. 25. All other aspects of the test were in accordance with procedures.

The Assessment Team reviewed 150 Inspection reports for proper certification of MPQAD inspectors. These reports covered inspections of various construction activities. Based on this review, the Assessment Team concludes that the Inspectors were properly certified.

Work Activity Packages

No Work Activity Packages were overviewed or active during the past week.

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

Nonconformance Identification Reports

The following Nonconformance Reports (NIRs) remain open or have been closed during the week.

<u>NIR No.</u>	<u>Description</u>	<u>Status</u> (Opened)(Closed)
22	Resident Engineering Document Control Stations	2/21/84
23	Subcontractor Work Print Stations	3/13/84 3/28/84
24	Design Drawing Review at UAT Workprint Station	3/30/84
25	Compressive Strength Testing of Concrete Cylinders	3/30/84

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.

OPINION ITEM - 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.

CLOSES ITEM -XX-XX - This notation identifies an action that closes a previously identified open item. Tracking of the item stops.

The following listing of all Open items from the Daily Meeting Notes with Bechtel and the text of the Weekly Reports. Carry-over items from past weeks have been Closed this week are also listed.

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
64-7	QAP Review Program	Open
64-10	Trend Analysis	Open

Midland Plant

Units 1 & 2

Independent Assessment of Underpinning

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
71-17	Computerized Civil Drawing Register	Open
71-29	Use of "Retired" FCRs	80-27
74-21	US Testing Corrective Action	Open
74-25	Expansion Anchors	Open
75-9	RE Document Control	80-28
77-12	FCR Processing Task Force	Open
77-13	Drawing Attachment Stamp	80-10
79-5	Bearing Plate at Kc9	80-12
79-26	Upper Leveling Plate	Open
79-28	SWPS Backpacking Material	Open
79-34	SWPS Backpacking Placement	Open
80-28	Resident Engineering Document Control	Open

WE Keller
Project Engineer

WE Keller for AS Smith
Project Manager

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

Held at Midland Site
Midland, Michigan
March 26, 1984

Present For:

Consumers Power

G. Murray
R. Wheeler

Bechtel

J. Kelleher
S. Hartstern
D. Lavelle

MPQAD

R. Sevo
J. McMaster

Stone & Webster

L. Rouen
D. Benvie
D. Zito

Parsons Brinckerhoff

B. Metros

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 80-1 - Auxiliary Building Underpinning Activities.

Placement of concrete in the CT-1/12 pier shafts has been completed.

Installation of the upper and lower leveling and bearing plates has been completed for pier Kc4.

The lower leveling plates for piers E/W-16 have been grouted into place.

(INFORMATION ITEM)

Item 80-2 - Bearing Plate at Kc9.

In response to a Bechtel question concerning the pier Kc9 upper leveling plate, D. Benvie clarified the Assessment Team's concern. He stated that the Assessment Team's concern was with compatibility of fabrication vs installation tolerances. D. Lavelle agreed to resolve the concern. (Item 79-5 remains OPEN)(INFORMATION ITEM)

Item 80-3 - NIR 23-Subcontractor Work Print Station.

R. Sevo stated that the MPQAD response to NIR 23 will be transmitted to the Assessment Team today. (INFORMATION ITEM)

Item 80-4 - Trend Analysis.

J. McMaster reported that implementation of the revised trend analysis program has been rescheduled from 4/2/84 to 5/1/84. The present trending system remains in effect. (INFORMATION ITEM)

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

Held at Midland Site
Midland, Michigan
March 26, 1984

New Items

Item 80-5 - Action Plan for Engineering Document Control.

D. Lavelle stated that a presentation detailing specifics of the revised document control program for Resident Engineering is scheduled for 3/28/84. (INFORMATION ITEM)

Item 80-6 - Receipt Inspection for Piers CT 3/10 Transfer Frames.

L. Rouen noted that receipt inspection for the piers CT 3/10 transfer frames have not been performed. The Assessment Team asked if the receipt inspection will be accomplished soon to provide an adequate period of time to undertake corrective action if needed prior to the planned installation date. FSO will respond. (OPEN ITEM)

Response Items

No response items were addressed.

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

Held at Midland Site
Midland, Michigan
March 27, 1984

Present For:

Consumers Power

G. Murray
R. Wheeler

Bechtel

D. Lavelle
J. Kelleher
E. Cvikl

MPQAD

R. Sevo
J. McMaster

Stone & Webster

L. Rouen
D. Bervie
D. Zito

Parsons Brinckerhoff

B. Metros

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 80-7 - Auxiliary Building Underpinning Activities.

Installation of the steel collar frame has been completed.

The W8 grillage was locked off yesterday. At the time of lock off, the amount of upward building movement has decreased from 63 mils measured just prior to start of jacking to 53 mils.

The upper leveling and bearing plate assembly has been installed for pier E16.

(INFORMATION ITEM)

Item 80-8 - SWPS Underpinning Activities.

D. Lavelle reported that placement of concrete for a portion of the SWPS Carlson meter encasements is scheduled for 3/28/84. (INFORMATION ITEM)

New Items

Item 80-9 - SWPS Embedded Plates.

D. Bervie asked if FSO still planned to cut the rebar at selected areas on the SWPS north wall in order to facilitate embedded plate installation. J. Kelleher responded that the shear lug locations for the embedded plates will be adjusted to compensate for the location of the existing rebar, alleviating the need to cut the reinforcing steel. (CLOSED ITEM)

Response Items

Item 80-10 - Drawing Attachment Stamp.

E. Cvikl addressed the Assessment Team's question concerning methods for posting attachments to the Resident Engineer's controlled drawings. He provided the Assessment Team with a copy of the new administrative procedure

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

Held at Midland Site
Midland, Michigan
March 27, 1984

for maintaining and distributing the Resident Engineers' controlled documents and attachments. The procedure requires that all FCRs/FCNs, DCNs and SCNs be attached to the back of the appropriate drawings. Previously, the procedures allowed the change documents to be either attached to the back of the drawing or listed on a block stamp on the front of the drawing and maintained in a separate location. The Assessment Team believes that designation of one method to post attachments to drawings will preclude the possibility of missing or improper posting of attachments. (CLOSES ITEM 77-13)

Item 80-11 - Receipt Inspection of Piers CT1/10 Transfer Frames.

J. McMaster responded to the Assessment Team question concerning receipt inspection of the transfer frames for piers CT3/10. MPQAD will inspect the transfer frames in the next two weeks. Since the load transfer for piers CT3/10 is not scheduled until 7/84, implementation of corrective action, if required, will not impact completion of the piers. (CLOSES ITEM 80-6)

Item 80-12 - Lower Bearing Plate at Pier Kc9.

D. Lavelle responded to the Assessment Team question concerning compatibility of fabrication vs installation tolerances for the pier Kc9 bearing plate. An evaluation of the tolerances by FSO has shown that there is no conflict between fabrication and installation requirements. Based upon a visual inspection, the underpinning subcontractor rejected the bearing plate because of warpage. A subsequent check of the rejected bearing plate with feeler gauges showed the plate to be within acceptable tolerances. (CLOSES ITEM 79-5)

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

Held at Midland Site
Midland, Michigan
March 28, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
G. Murray	D. Lavelle	J. McMaster	D. Benvie
R. Wheeler	J. Kelleher	G. Carpenter	D. Zito
	E. Cvikl		P. Majeski
	J. Gaydos		
	S. Hartstern		<u>Parsons Brinckerhoff</u>
	J. Brown*		J. Oliveira

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

Status Items

Item 80-13 - Auxiliary Building Underpinning Activities.

Placement of the grout mudmat in the instrumentation pits for piers CT1/12 was completed.

The jackstands and jacks have been installed for pier Kc4.

The upper leveling and bearing plate assembly for piers E/W16 have been grouted into place.

(INFORMATION ITEM)

Item 80-14 - SWPS Underpinning Activities.

J. Kelleher stated that an FCR is being processed to relocate shear lugs required for installation of the embedded plates on the SWPS north wall. Shear lugs are being relocated to allow their installation without having to cut existing rebar on the north wall. (INFORMATION ITEM)

New Items

Item 80-15 - Document Control Upgrading.

J. Brown of Bechtel provided a status of the Document Control upgrading activities and a summary of future changes. She indicated that the plans include the development of a Master Document Control Center, an element of which will be the Field Document Control Center (FDCC). Five stations with controlled documents will be established. These stations will be managed by the FDCC to assure that documents are controlled in a uniform manner throughout the site. The Design Document Register will be the means used to control the attachments to documents as well as their distribution on site. A review group internal to document control will be used to assure that the documents are maintained properly. An

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

Held at Midland Site
Midland, Michigan
March 28, 1984

evaluation is currently underway to decide whether the Resident Engineering Document Control Center should become a new station serviced by FDCC or should remain independent. The upgrading of the Document Control System is expected to be complete during the third quarter of this year.
(INFORMATION ITEM)

Response Items

No response items were addressed.

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

Held at Midland Site
Midland, Michigan
March 29, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
R. Wheeler	D. Lavelle	J. McMaster	P. Majeski
	J. Kelleher	J. Moran	D. Benvie
	E. Cvikl		D. Zito
	S. Hartstern		
	J. Gaydos		<u>Parsons Brinckerhoff</u>
	J. Davies		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 80-16 - Auxiliary Building Underpinning Activities.

The lower leveling plates have been installed in piers CT1/12.

Load transfer for pier Kc4 has begun.

Installation of embedded channels in the Kc10 to Kc9 drift invert is in progress.

(INFORMATION ITEM)

Item 80-17 - SWPS Underpinning Activities.

M. Blendy discussed a potential leakage problem below the bentonite seal. The leakage is suspected based upon observation well readings. It is believed that water may be seeping through the gravel and riprap layer below the seal. FSO will perform a visual inspection and use dye to trace any water flow through these permeable layers. (INFORMATION ITEM)

Item 80-18 - Use of "Retired" FCRs.

J. Kelleher provided the Assessment Team with revised construction and engineering procedures related to the preparation and control of FCRs/FCNs. The Assessment Team was advised that these procedures address the handling and use of "Retired" FCRs. (ITEM 71-29 remains OPEN) (INFORMATION ITEM)

New Items

Item 80-19 - Document Review of UAT Workprint Station.

P. Majeski informed FSO that the Assessment Team will perform a document review at the UAT workprint station. (INFORMATION ITEM)

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

Held at Midland Site
Midland, Michigan
March 29, 1984

Item 80-20 - MPQAD Welding Audit.

D. Lavelle stated that the MPQAD welding audit has been completed. A report detailing findings will be issued in the next two weeks. (INFORMATION ITEM)

Item 80-21 - Weekly Report # 79.

The text of Weekly Report # 79 was reviewed. It was determined that all open items had been previously identified. (INFORMATION ITEM)

Item 80-22 - Stabilizer Plate Oversized Holes.

J. Oliveira asked if an FCR was being prepared to allow the use of oversized rock bolt holes in order to simplify installation of the piers CT1/12 stabilizer plates. J. Kelleher responded that rock bolts and plates needed for the transfer frame stabilizer plates will be installed as one unit. Installing the assembly as one unit will not require oversized holes. (CLOSED ITEM)

Response Items

Item 80-23 - NIR 23 Subcontractor Work Print Stations.

The Assessment Team completed their review of the response to NIR 23 which identifies work station document deficiencies. The response stated that errors noted in NIR 23 have been corrected. Additionally, the results of a "self audit" conducted by FSO of their controlled documents indicate that these documents are being maintained in a satisfactory manner. The Assessment Team verified the correction of the deficiencies and reviewed the "self audit" report. Based upon this information, NIR 23 was closed on 3/28/84. (INFORMATION ITEM)

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

Held at Midland Site
Midland, Michigan
March 30, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
R. Wieland	D. Lavelle	J. McMaster	P. Majeski
	J. Kelleher	J. Moran	D. Benvie
	E. Cvikl		D. Zito
	S. Hartstern		
	J. Gaydos		<u>Parsons Brinckerhoff</u>
	M. Blendy		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 80-24 - Auxiliary Building Underpinning Activities.

The lower leveling plates have been set into place and the stabilizer plate rock bolts have been set into place for piers CT1/12.

Installation of the rebar has begun for the pier Kc3 to Kc4 drift invert.

(INFORMATION ITEM)

Item 80-25 - FCR Processing Task Force.

M. Blendy discussed the status of the FCR processing task force study undertaken to improve the FCR response time. Primary objectives of the task force include identification of delays during FCR processing, designating suitable process times and establishing an average rate of FCRs to be processed and addressed daily. Additionally a planning group has been established to identify areas in advance where FCR's are required in order to levelize the work load and reduce the number of critical FCR's which may impact work progress. (ITEM 77-12 remains OPEN) (INFORMATION ITEM)

New Items

Item 80-26 - NIR 24 - Design Drawings at UAT Workprint Station.

P. Majeski stated the Assessment Team had completed their review of design drawings at the UAT workprint station. As a result of the review, NIR 24 will be issued today describing deficiencies noted by the Assessment Team. These deficiencies were two missing attachments to the design drawings, the posting of a drawing that was not a current issue and a drawing attachment not identified in the block stamp. (INFORMATION ITEM)

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

Held at Midland Site
Midland, Michigan
March 30, 1984

Response Item

Item 80-27 - Use of Retired FCRs.

The Assessment Team has completed their review of document control procedures that have been revised to improve the handling and use of "retired" FCRs. In lieu of retiring one time deviation FCRs from the controlled documents after 30 days, all future one time deviation FCRs will either be directly incorporated into the design document or referenced on the document with a brief description. Additionally, one time deviation FCRs written in the past will be incorporated into or referenced on the design drawings. The Assessment Team believes direct incorporation or referencing of one time deviation FCRs on the design documents will improve the handling of this type of FCR. This item is now closed. (CLOSES ITEM 71-29)

Response Items

Item 80-28 - Resident Engineering Document Control.

The Assessment Team reviewed project engineering procedures and administrative procedures for handling and maintaining the Resident Engineers Controlled documents. Inconsistencies were noted between the administrative and project engineering procedures in regards to posting of attachments and annotating the drawings to signify a revision is in progress. The Assessment Team requested the Contractor to review the project engineering and administrative procedures related to controlled documents in order to identify and resolve these inconsistencies. (CLOSES ITEM 75-9) (OPEN ITEM)