



# STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

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

April 18, 1984

J.O. No. 14358  
Ref. MPF 82

Attention: Mr. Cook

DOCKET NO. 50-339/330  
MIDLAND PLANT UNITS 1 & 2  
INDEPENDENT ASSESSMENT OF UNDERPINNING  
REPORT NO. 82

A copy of the Independent Assessment of Underpinning Weekly Report No. 82 for the period of April 8, 1984 through April 14, 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) 589-2067.

*D.A. Benzie for A.S. Lucks*

A. Stanley Lucks  
Project Manager

Enclosures  
ASL/pd

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

Weekly Report No. 82

April 8, 1984 through April 14, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	4/10 - 4/14
D. Benvie	4/9 - 4/14
D. Zito	4/9 - 4/13
L. Rouen	4/8 - 4/10
W. Kilker	4/8 - 4/10
S. Lucks	4/10 - 4/13

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	4/10 - 4/14
B. Metros	4/8 - 4/10

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
4/9 - 4/11 4/13	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting
4/9	Consumers Power Bechtel MPQAD Stone & Webster	Project Soils Meeting
4/12	NRC Consumers Power Stone & Webster	Monthly Meeting With NRC
4/13	Stone & Webster Consumers Power Bechtel MPQAD	Interorganizational Meeting

Underpinning and Remedial Soils - Construction

Pier E17: Drifting to the pier has begun. The drift heading is entirely in fill concrete.

Pier W17: Excavation, lagging installation, and backpacking have been completed for the drift.

Kc4 to Kc5 and Kc8 to Kc9 Drifts: Excavation of these drifts has begun. Installation of drift sets is in progress.

Piers E/W5: Drifting to these piers has begun.

Piers CT 1/12: Load transfer for both piers has begun. Routine rejackking is in progress.

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Units 1 & 2  
Independent Assessment of Underpinning

Piers CT 3/10: Excavation of the drifts to these piers has been initiated.

E/W8 Grillages: Jacking to increase the reserve capacity load at each grillage has been completed. The amount of loading at both grillages is at 160% of the specified load. Upward building movement measured for the east and west grillages was 58 mils and 49 mils respectively at the time of load lock off.

Access Shaft Level C Wales: Alignment and fitup of the Level C wales continued for the east and west access shaft.

SWPS: Installation of the upper level wale is in progress. Installation of the struts for support of the soldier pile wall has been completed along the east side of the SWPS.

#### Assessment Team Observations - Construction

Load transfer for the CT 1/12 piers was observed by the Assessment Team. The successful and timely completion of this activity is of primary importance in allowing work to progress into other areas of the Auxiliary Building underpinning. In order to achieve this goal, a concerted planning and coordination effort was exhibited by the Contractor. Key activities requiring completion prior to the start of load transfer were tracked on a chart board in the work area. Prior to the start of jacking, the underpinning subcontractor reviewed the methodology of the jacking operations with the craftsmen, MPQAD and the field and resident engineers. This review served the purpose of ensuring a thorough understanding of the jacking operations by all organizations involved. Increments and rate of loading conformed with procedural requirements. Jacking loads were maintained at the required values until the acceptance criteria was met. Instrumentation data was read and reduced expediently and accurately allowing constant evaluation of building and pier movement throughout the jacking operations. Although the amount of instrumentation data produced during the jacking operation was extensive and complex, the data that the engineering personnel chose to concentrate on was in the opinion of the Assessment Team, the most pertinent. Absolute base movement for pier CT 1/12 was on the order of 1/8 inch at the time of lock off. This value of initial soil compression corresponds with that observed at most of the previous pier installations. The Assessment Team concludes that procedural requirements were effectively implemented during initial load transfer for piers CT 1/12.

The Assessment Team observed installation of support steel for the drift to pier E17. Drift steel members were aligned in accordance with procedures. Bolts required for drift steel connections were torqued to the appropriate tension. The Assessment Team concludes that the resulting installation conformed with procedural and design requirements.

The ongoing work at the SWPS includes installation of struts and both surface mounted and embedded strut plates required for support of the soldier pile wall. Welding of struts to the surface mounted strut plates was observed by the Assessment Team. Surface preparation of the plates and preheating complied with procedural requirements. Removal of slag and cleaning of the finished weld and adjacent base metal was satisfactory.

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Installation of the mechanical anchor bolts to support a large embedded strut plate on the SWPS north wall was performed this week. Anchor bolts were torqued to the required design tension. The annular space around the anchor bolts was grouted within 5 days of tensioning as required by the procedures. Installation of grout tubes, location of the venting tubes and method of grout placement conformed with applicable procedures. During grouting for two of the anchor bolt holes some grout loss occurred while retracting the grout hose. The underpinning subcontractor thoroughly cleaned the anchor holes with air and water prior to regrouting these holes. The subsequent regrouting was accomplished successfully, completing a satisfactory installation for all the anchor bolts required for support of the embedded plate.

#### Assessment Team Observations - QA/QC

The Assessment Team overviewed the results of an MPQAD review of their controlled document files. Based on the population size and the type of deficiencies found, the Assessment Team considers the deficiency rate noted in the review to be acceptable. The Assessment Team concludes that MPQAD is satisfactorily maintaining their controlled documents, particularly with respect to proper posting of attachments.

Repair of the CT 12 base plate grout was required due to surface voids that resulted during initial grout placement. A quick set grout was used to repair these surface voids. The Assessment Team witnessed mixing and preparation of the grout test specimens by the US Testing technician. The mixing and preparation of the specimens conformed with the requirements of the US Testing quality control procedures.

#### Work Activity Packages

The following Work Activity Package (WAP) overviews are in the open response stage or have been completed during the past week.

<u>WAP No.</u>	<u>Title</u>	<u>Status</u>
		(Opened) (Closed)
83	Excavate, Install and Backfill Electric Ductbank and Equipment Pad For HVAC Fans	4/10/84

#### 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



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<u>NIR No.</u>	<u>Description</u>	<u>Status</u> (Opened) (Closed)
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 open 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 which 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
71-17	Computerized Civil Drawing Register	Open
74-21	US Testing Corrective Action	Open
74-25	Expansion Anchors	82-6
77-12	FCR Processing Task Force	82-12

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<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
79-26	Upper Leveling Plate	Open
79-28	SWPS Backpacking Material	Open
79-34	SWPS Backpacking Placement	Open
81-6	MPQAD Controlled Document Review	82-14
81-8	MPQAD Welding Audit	Open
81-21	BOP Construction Verification of Soils Work	Open
81-25	Trend Analysis Update	82-9
81-34	Update on Welding NCRs	82-13
82-3	Surface Voids in Grout	Open
82-9	Trend Analysis Update	Open

*D.A. Burns for W. Kilken*  
Project Engineer

*D.A. Burns for A.S. Jenkins*  
Project Manager

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

Held at Midland Site  
Midland, Michigan  
April 9, 1984

Present For :

Consumers Power

G. Murray  
R. Wheeler

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD

J. McMaster  
B. Lytle

Stone & Webster

W. Kilker  
D. Benvie  
D. Zito  
L. Rouen

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 82-1 - Auxiliary Building Underpinning Activities.

The upper leveling and stabilizer plates have been grouted into place for piers CT 1/12.

Excavation of the drift to pier E16 has begun. Presently the drift face is completely in concrete.

Installation of drift steel is in progress for pier W17.

Jacking for reserve capacity loading has been completed for the E/W8 grillages. The amount of loading at the east and west grillages is at 160 % and 159% of the specified load, respectively.

(INFORMATION ITEM)

New Items

Item 82-2 - Pier W17 Drift.

D. Benvie asked why drifting to pier W17 has been discontinued. J. Fisher responded that there is only one work crew assigned to the E/W17 piers. This crew will alternate between the E/W17 piers as determined by FSO. (CLOSED ITEM)

Item 82-3 - Surface Voids in Grout.

D. Zito discussed the NCRs written after surface voids were observed in the grout for both the horizontal rockbolts at the control tower corners and the upper leveling plates for piers E/W16. The voids were surficial and did not affect the integrity of the rockbolts or the leveling plates. The Assessment Team asked if procedural and/or installation changes will be made to address this situation on future installations. J. Fisher will respond. (OPEN ITEM)

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

Held at Midland Site  
Midland, Michigan  
April 9, 1984

Item 82-4 - UAT Lateral Wellpoints.

B. Metros asked when operation of the UAT lateral wellpoints had resumed. The Contractor responded that the west UAT lateral wellpoints have been operating for the past week. The wellpoints are activated only on the day shift and the quantity of flow has been approximately 400 gallons per day. The east UAT wellpoint have not been pumped. (CLOSED ITEM)

Item 82-5 - Level C Wales.

W. Kilker asked if NCRs that were written before the October 1983 Stop Work Order will impact installation of the Level C wales in the vicinity of the turbine building. J. Kelleher responded that implementation of corrective action will be accomplished in conjunction with the wale installation. No impact is anticipated. (CLOSED ITEM)

Response Items

Item 82-6 - Expansion Anchors.

In response to an earlier Assessment Team concern regarding loose washers on Hilti bolts, J. Kelleher provided the Assessment Team with a copy of an FCR allowing the use of a quick set grout beneath Hilti bearing plates. The purpose of the grout type is to provide uniform bearing beneath the plate to alleviate the occurrence of point loading. Loosening of Hilti washers in the past has been attributed to the effects of point loading on the relatively rough concrete surface on the bottom of existing foundations. The Assessment Team concurs that use of the rapid set grout will aid in reducing the possibility of washer loosening. (CLOSES ITEM 74-25)



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

Held at Midland Site  
Midland, Michigan  
April 10, 1984

Present For:

Consumers Power

G. Murray  
J. Schaub

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl  
D. Morris

MPQAD

J. McMaster  
J. Meisenheimer  
J. Moran

Stone & Webster

W. Kilker  
D. Beavie  
D. Zito  
L. Rouen

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 82-7 - Auxiliary Building Activities.

Installation of the jackstand hardware for pier CT 1 has been completed.

Drift excavation and drift support steel installation continued for piers E/W 17.

(INFORMATION ITEM)

Item 82-8 - NIR 24 Design Drawing Review at UAT Workprint Station.

J. Fisher stated that the QAR response to NIR 24 addressing document deficiencies at the UAT workprint station will be issued by FSO today.  
(NIR 24 remains OPEN) (INFORMATION ITEM)

New Items

No new items were discussed.

Response Items

Item 82-9 - Trend Analysis Update.

J. Meisenheimer provided an update on the status of the MPQAD NCR trending program described in Item 64-10 and discussed in Item 81-25. As predicted in Item 64-10, the new trend analysis system was initiated by the Balance of the Plant MPQAD during the first quarter of 1984. However, the MPQAD Soils group has identified problems in incorporating certain of the particular attributes evaluated for the underpinning work into the new trending program. Mr. Meisenheimer stated a decision will be made within the next week as to whether or not the revised trending system will be used for MPQAD Soils trending. If not, the existing trending evaluation will be continued. In general, Mr. Meisenheimer feels quite satisfied with the present manual system in that the number of NCRs to be tracked is on the average of 3 per day.

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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Plant  
Midland, Michigan  
April 10, 1984

W. Kilker stated the Assessment Team will withhold comment until the decision is made next week on whether to use the new trending system.  
(Item 64-10 remains OPEN) (CLOSES ITEM 81-25 ) (OPEN ITEM)

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

Held at Midland Site  
Midland, Michigan  
April 11, 1984

Present For:

Consumers Power

J. Schaub  
R. Wheeler

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl  
D. Morris  
M. Blendy  
D. Lavelle

MPQAD

J. McMaster  
R. Sevo

Stone & Webster

W. Kilker  
D. Benvie  
D. Zito  
A. Lucks  
P. Majeski

Parsons Brinckerhoff

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 82-10 - Auxiliary Building Underpinning Activities.

Load transfer for piers CT1/12 is scheduled for tomorrow.

The soil portion of the drift excavation for pier W17 has progressed to the reactor containment wall.

(INFORMATION ITEM)

Item 82-11 - US Testing Corrective Action.

J. Fisher stated that FSO has assumed responsibility for maintaining the US Testing controlled documents as of today. Submittal of all seven Quality Control procedures (QCPs) containing 46 work instructions should be completed by this weekend. Final issuance of the QCPs is scheduled shortly thereafter. (Item 74-21 remains OPEN) (INFORMATION ITEM)

New Items

No new items were discussed.

Response Items

Item 82-12 - FCR Processing Task Force.

M. Blendy discussed the FCR Task Force report containing recommendations to improve the FCR response time. Assignment of a process criteria code to prioritize FCRs will be implemented by 4/15/84. A planning group has

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

Held at Midland Site  
Midland, Michigan  
April 11, 1984

been established to identify the need for and initiate FCRs at least one week prior to the scheduled work activity. Where lead time for a change needed for a particular work activity exceed 30 days, the Task Force has recommended that DCNs be used rather than FCRs. The Task Force has also recommended establishment of a committee to develop need criteria for development of an FCR, thereby eliminating many unnecessary FCRs. The Assessment Team believes that the recommendations set forth by the Task Force will aid in reducing the process time for FCRs. (CLOSES ITEM 77-12)

Item 82-13 - Update on Welding NCRs.

M. Blendy presented a comparison on the number of welding NCRs issued in the past 2 to 3 months as opposed to the same period last year. The number of NCRs issued since 1/84 has decreased by approximately 50% as compared with the number of NCRs issued between January and March 1983. This decrease is attributed to procedural changes which now clarify and/or incorporate requirements for items such as preheat and fitup. (CLOSES ITEM 81-34)

Item 82-14 - MPQAD Controlled Document Review.

J. McMaster provided the Assessment Team with a copy of the review plan and the results of the MPQAD monthly "self audit" of their controlled document station performed for the month of March. Attributes evaluated during the review included drawing revision number, proper posting of attachments and the presence of the proper identification stamp on the drawing. The sample size reviewed was 1031 documents. The number of attributes checked was 4754 and a total of 26 deficiencies were noted. (CLOSES ITEM 81-6)



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

Held at Midland Site  
Midland, Michigan  
April 12, 1984

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 Midland Site  
Midland, Michigan  
April 13, 1984

Present For:

Consumers Power

None

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl  
D. Lavelle

MPQAD

J. McMaster

Stone & Webster

D. Benvie  
D. Zito  
P. Majeski

Parsons Brinckerhoff

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 82-15 - Auxiliary Building Underpinning Activities.

Load transfer is in progress for piers CT 1/12.

Installation of the struts for the pier CT 1 steel collar frame has begun.

Drift steel and lagging installation for the pier W17 drift is in progress.

(INFORMATION ITEM)

Item 82-16 - SWPS Underpinning Activities.

Installation of the soldier pile wall struts has been completed along the east side of the SWPS. Excavation below the first level of wales along the east side is expected to begin in the near future. (INFORMATION ITEM)

Item 82-17 - NIR 24 - Design Drawing Review at UAT Workprint Station.

J. McMaster stated that the QAR response to NIR 24 addressing document deficiencies at the UAT workprint station is being reviewed by MPQAD. The review is being co-ordinated with the Assessment Team to ensure the QAR response properly addresses the deficiencies noted in NIR 24. (NIR 24 remains OPEN) (INFORMATION ITEM)

New Items

Item 82-18 - Weekly Report # 81.

The text of Weekly Report # 81 was reviewed. It was determined that all open items had been previously identified. (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
April 13, 1984

Item 82-19 - Pier E17 Construction.

D. Benvie asked if the original design for pier E17 will be implemented if soil conditions are satisfactory. J. Fisher responded that the shaft portion of pier E17 will be excavated in accordance with the original design. If it is found that bell excavation can be accomplished in the material encountered the remainder of the pier will be constructed in accordance with the original design. If belling cannot be accomplished, then the alternate design for the pier will be implemented. The alternate design consists of enlarging the initial pier shaft area and constructing it as a straight pier to founding grade. The pier will then be enlarged by constructing two additional piers directly adjacent to two sides of the initial shaft thus creating one large pier. (CLOSED ITEM)

Response Items

No response items were addressed.



# STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

PRINCIPAL STAFF			
RA	<i>Lee</i>	DPRP	<i>orig 2</i>
D/RA		DE	
A/RA		DRMSP	
RC		DRMA	
PAO		SCS	
SGA		ML	
ENF		File	<i>Lee</i>

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

April 24, 1984

J.O. No. 14358  
Ref. MPF 83

Attention: Mr. Cook

DOCKET NO. 50-339/330  
MIDLAND PLANT UNITS 1 & 2  
INDEPENDENT ASSESSMENT OF UNDERPINNING  
REPORT NO. 83

A copy of the Independent Assessment of Underpinning Weekly Report No. 83 for the period of April 15, 1984 through April 21, 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) 589-2067.

*WE Keller for A.S. Lucke*

A. Stanley Lucke  
Project Manager

Enclosures  
ASL/pd

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MAY 23 1984



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

Held at Midland Site  
Midland, Michigan  
April 19, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher	J. McMaster	D. Benvie
R. Wheeler	J. Kelleher	J. Meisenheimer	D. Zito
	E. Cvikl		<u>Parsons Brinckerhoff</u>
			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 83-19 - Auxiliary Building Undepinning Activities.

Installation of the reshore members is in progress for the drift to pier W5.

Routine rejackng has been completed for pier CT 1.

Excavation of the W17 pier shaft is complete.

Pier Kc9 was rejackng for load verification.

(INFORMATION ITEM)

New Items

Item 83-20 - Receipt Inspection of the CT 3/10 Transfer Frames and E/W5 Grillages.

J. McMaster reported that MPQAD will begin receipt inspection of the CT 3/10 transfer frames today. D. Benvie asked if receipt inspection of the E/W 5 grillages has been completed. J. Fisher will respond. (OPEN ITEM)

Item 83-21 - Weekly Report # 82.

The text of Weekly Report # 82 was reviewed. It was determined that all open items had been previously identified. (INFORMATION ITEM)

Response Items

Item 83-22 - NIR 24 Design Drawing Review at UAT Workprint Station.

D. Benvie stated that the Assessment Team has reviewed the QAR response to NIR 24 addressing document deficiencies at the UAT workprint station. Document deficiencies noted in the NIR have been corrected. Additionally, a sample audit of the UAT workprint station by MPQAD did not reveal any deficiencies. Based on the sample audit results and an independent review by the Assessment Team that the noted document deficiencies were corrected, NIR 24 is closed. (INFORMATION ITEM)

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

Weekly Report No. 83  
April 15, 1984 through April 21, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	4/15 - 4/17
D. Benvie	4/16 - 4/21
D. Zito	4/16 - 4/20
L. Pouen	4/16 - 4/20
J. Springer	4/17 - 4/19

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	4/15 - 4/18
B. Metros	4/18 - 4/21

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
4/16 - 4/20	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting

Underpinning and Remedial Soils - Construction

Pier E17: Excavation of the drift was completed.

Pier E5: Excavation of the pier shaft began. Drifting to the reactor containment for installation of the E5 grillage continued.

Kc4-Kc5 and Kc9-Kc8 Drifts: Excavation , lagging installation and backpacking continued .

Piers CT 3/10: Soils stabilization grouting and excavation of the drop pits for piers CT 2/11 continued in preparation for drifting to piers CT 3/10.

Piers CT 1/12: Routing rejackng has been completed for these piers.

Pier W5: Drifting to the reactor containment for installation of the W5 grillage was completed..

Pier W17: Excavation of the pier is in progress.

Access Shaft Level "C" Wales: Alignment and fitup of the level C wales continued for the east and west access shafts.

SWPS: Installation of the upper level wales continued. Grouting of the strut plates for support of the soldier pile wall has been completed along the east wall.

BWST: Construction of the ring foundation addition for both tanks has resumed.

Cathodic Protection: Installation of cathodic protection in the yard area has resumed.

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 Midland Plant  
 Units 1 & 2  
 Independent Assessment of Underpinning

#### Assessment Team Observations - Construction

Completion of load transfer for the CT 1 and 12 piers has allowed underpinning activities to progress into other areas of the Auxiliary Building. Excavation, backpacking, lagging placement and support steel erection for the drifts to piers Kc5/9 and E/W5 was observed by the Assessment Team. Lagging was installed one board at a time and backpacked prior to installation of the next board. The sand backpacking was tamped firmly and evenly into place. Drift support steel was aligned in accordance with design requirements. Drilling, installation and torquing of expansion anchors for the drift support sets conformed with project procedures. The level of workmanship exhibited in performing the activities associated with drift construction continues to result in a quality installation.

Other underpinning activities in the Auxiliary Building overviewed by the Assessment Team include soil stabilization grouting for the CT 3/10 drifts and excavation of the E5 and W17 pier shafts. The method of grout placement and grouting pressures used were in accordance with the procedures. Stability of the excavated CT 3/10 drift walls subsequent to grouting indicated that the grouting was effective. Excavation of the E5 and W17 pier shafts was performed with the aid of a template. Use of the template was effective in minimizing over excavation and maintaining the pier shaft alignments. The Assessment Team concludes that the implementation of the grouting program and use of the template was prudent and effective in stabilizing the soil and minimizing over-excavation.

#### Assessment Team Observations - QA/QC

The Assessment Team overviewed the MPQAD receipt inspection of the CT 3/10 transfer frames. The MPQAD inspector used proper inspection techniques to thoroughly verify all dimensional requirements with the applicable design and shop drawings. All material mark numbers were checked for traceability. The MPQAD findings included a fabrication error associated with a cross member of one of the transfer frames and a determination that some of the material mark numbers were missing. The Assessment Team concludes that the MPQAD receipt inspection of the CT 3/10 transfer frame was complete and thorough.

Crack mapping in the Control Tower by the crackmapping subcontractor (WJE) was witnessed by the Assessment Team. The activity was being performed by two technicians under the direction of a WJE Quality Assurance Engineer. The Assessment Team believes this approach is an effective method to ensure that both the procedural and technical intent of the project requirements for crack mapping are met.

#### Work Activity Packages

The following Work Activity Package (WAP) overviews are in the open response stage or have been completed during the past week.

<u>WAP No.</u>	<u>Title</u>	<u>Status</u>
		(Opened) (Closed)
83	Excavate, Install and Backfill Electric Ductbank and Equipment Pad For HVAC Fans	4/10/84 4/16/84

J.O. No. 14358  
 Midland Plant  
 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
24	Design Drawing Review at UAT Workprint Station	3/30/84 4/19/84
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 open 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 which have been Closed this week are also listed.

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
64-7	QAP Review Program	83-24
64-10	Trend Analysis	Open
71-17	Computerized Civil Drawing Register	Open



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

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
74-21	US Testing Corrective Action	Open
79-26	Upper Leveling Plates	Open
79-28	SWPS Backpacking Material	Open
79-34	SWPS Backpacking Placement	Open
81-8	MPQAD Welding Audit	83-25
81-21	BOP Construction Verification of Soils Work	Open
81-25	Trend Analysis Work	82-9
82-3	Surface Voids in Grout	Open
82-9	Trend Analysis Update	Open
83-17	Crackmapping Subcontractor Audit	Open

WE Kilher  
 Project Engineer

WE Kilher AS General  
 Project Manager

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

Held at Midland Site  
Midland, Michigan  
April 16, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl  
B. Brandes

MPQAD

J. McMaster  
R. Sevo

Stone & Webster

P. Majeski  
D. Benvie  
D. Zito  
L. Rouen

Parsons Brinckerhoff

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 83-1 - Auxiliary Building Underpinning Activities.

Routing rejackng is in progress for piers CT 1/12.

Excavation of the drop pits to piers (T 2/11 has begun in preparation for drift excavation to piers CT 3/10.

Installation of lagging and backpacking has been completed for the pier W17 drift.

Excavation of the Kc4 to Kc5 and Kc9 to Kc8 drifts and installation of drift sets and associated lagging and backpacking is in progress.

Drifting to piers E/W5 has begun.

(INFORMATION ITEM)

Item 83-2 - SWPS Underpinning Activities.

J. Fisher reported that rain during the weekend had washed in a small portion of backpacking material along the north side of the SWPS. The affected area is presently being repacked. (INFORMATION ITEM)

Item 83-3 - US Testing Corrective Action.

J. Kelleher reported that all of the US Testing quality control procedures with attached work instructions have been submitted to project engineering for review. Final issuance of the quality control procedures is expected in the near future. (Item 74-21 remains OPEN)

Item 83-4 - Upper Leveling Plate.

J. Kelleher reported that smaller welds will be used to alleviate warping of the upper leveling plate that has resulted during welding of the leveling and bearing plate assembly. Project engineering will issue DCNs designating the

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

Held at Midland Site  
Midland, Michigan  
April 16, 1984

new welding requirements for each type of leveling and bearing plate assembly. (Item 79-26 remains OPEN) (INFORMATION ITEM)

Item 83-5 - NIR 22 - Resident Engineering Document Control.

J. McMaster stated that the MPQAD audit of the Resident Engineers controlled documents required as part of the closure for NIR-22 has been completed. The audit verified that deficiencies with the Resident Engineers controlled documents noted in NIR 22 have been corrected. Additionally, results of the audit indicate that the Resident Engineers controlled documents are being maintained properly. (NIR 22 remains OPEN) (INFORMATION ITEM)

Item 83-6 - NIR 25 - Compressive Strength Testing of Concrete Cylinders.

E. Cvikl stated that the QAR response written to address NIR 25 has been transmitted to MPQAD for review. NIR 25 was written as a result of deficiencies associated with the use of the maximum load indicator needle on the US Testing concrete compression machine. (NIR 25 remains OPEN) (INFORMATION ITEM)

New Items

Item 83-7 - Superplasticized Concrete.

P. Majeski asked if superplasticized concrete will be used for any future underpinning work. J. Fisher will respond. (OPEN ITEM)

Item 83-8 - NCR Processing.

P. Majeski asked if a review of the NCR process response time will be performed. MPQAD will respond. (OPEN ITEM)

Item 83-9 - Direct Hire Work.

J. Fisher reported that the following direct hire work activities will get underway in the near future:

- A. Boron Water Storage Tanks (BWSTs) ring foundations.
- B. Cathodic protection.
- C. Unit 2 HVAC foundation pad.
- D. Diesel Generator fuel oil lines.

(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  
April 17, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD

R. Sevo

Stone & Webster

D. Benvie  
D. Zito  
L. Rouen  
J. Springer

Parsons Brinckerhoff

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 83-10 - Auxiliary Building Underpinning Activities.

Soils stabilization grouting has begun for the drift to pier CT 10.

Excavation has begun for the W17 pier shaft.

Pier W9 was rejackd for load verification.

(INFORMATION ITEM)

Item 83-11 - QAP Review Program.

R. Sevo stated that the QAP task force recommendations for improving selected PQCI's, construction procedures and specifications will be submitted to CP Co today. (Item 64-10 remains OPEN) (INFORMATION ITEM)

New Items

Item 83-12 - Pier E17 Drift.

D. Benvie discussed the drift to pier E17. It was noted that the drift, which is in full face concrete has progressed far enough to allow excavation of the E17 pier shaft. He questioned the need for completing the drift to the reactor wall, as the remainder of the drift is in fill concrete.

J. Fisher will respond. (OPEN ITEM)

Response Item

Item 83-13 - Superplasticized Concrete.

In response to the Assessment Team question regarding future use of superplasticized concrete, J. Kelleher stated that it is not planned to

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

Held at Midland Site  
Midland, Michigan  
April 17, 1984

use this type of concrete for future work. The original intent for the use of superplasticizer was to facilitate pier concrete placement and develop high early concrete strength in order to allow loading of piers within 2 to 3 days of concrete placement. For piers completed to date, no placement problems have been experienced with concrete that does not contain superplasticizer. Additionally, load transfer has normally not been performed until at least 7 days after completion of concrete placement, alleviating the need for high early strength of the concrete.  
'CLOSES ITEM 83-7)



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

Held at Midland Site  
Midland, Michigan  
April 18, 1984

Present For:

Consumers Power

G. Murray  
R. Wheeler  
J. Schaub

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl  
W. Brandes

MPQAD

J. McMaster

Stone & Webster

D. Benvie  
D. Zito  
L. Rouen  
J. Springer

Parsons Brinckerhoff

None

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 83-14 - Auxiliary Building Underpinning Activities.

Soils stabilization grouting is in progress for the drift to pier CT 3.

Installation of lagging and backpacking is in progress for the drifts to piers E/W5.

Drift excavation to the containment for the E/W5 grillage is ongoing.

(INFORMATION ITEM)

Item 83-15 - NIR 24 Design Drawing Review at UAT Workprint Station.

J. McMaster provided the Assessment Team with a copy of the QAR response to NIR 24 addressing document deficiencies at the UAT workprint station for review. (NIR 24 remains OPEN) (INFORMATION ITEM)

Item 83-16 - Upper Leveling Plates.

J. Kelleher stated that a welding demonstration using smaller welds for the upper leveling and bearing plate assemblies will be given today. The purpose of the demonstration is to determine whether the smaller weld will decrease leveling plate warping. (Item 79-16 remains OPEN) (INFORMATION ITEM)

New Items

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

Held at Midland Site  
Midland, Michigan  
April 18, 1984

Item 83-17 - Crackmapping Subcontractor Audit.

E. Cvikl stated that the MPQAD audit of the crackmapping subcontractor (WJE) was completed yesterday. D. Benvie requested a copy of the audit report when it is issued. (OPEN ITEM)

Response Item

Item 83-18 - Pier E17 Drift.

J. Fisher responded to the Assessment Team question concerning completion of the pier E17 drift. Presently the drift which is in full face concrete, does not have to be advanced any further to allow construction of the E17 pier. However, procedural changes required to terminate the drift at this point would delay work on the E17 pier. The drift will, therefore, be completed to design limits. (CLOSES ITEM 83-12)

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

Held at Midland Site  
Midland, Michigan  
April 19, 1984

Item 83-23 - NCR Processing.

J. Meisenheimer responded to the Assessment Teams question concerning NCR process response time. It was stated that with minor exceptions, the process time associated with recent NCRs has not adversely impacted construction progress. MPQAD believes that timely processing of future NCRs can be maintained as the construction activity and complexity increases. The Assessment Team concurs with this response. However, D. Benvie stated that as part of the Assessment Team's normal overview of the work, the NCR resolution process will continue to be evaluated. (CLOSES ITEM 83-8)

Item 83-24 - QAP Review Program.

The Assessment Team reviewed the QAP task force recommendations for improving selected PQCI's, construction procedures and specifications that were submitted to CP Co. The recommendations include revisions to these documents to facilitate construction and inspection of structure steel fabrication and erection, expansion anchor installation and welding. The recommendations also include guidelines for use in developing PQCI's, construction procedures and specifications associated with new construction areas or revisions to existing construction areas. The Assessment Team believes that the efforts of the QAP Task Force were thorough. The recommendations developed by the Task Force will be useful in streamlining and facilitating inspection and construction for the processes reviewed. The Assessment Team also believes that the guidelines recommended for developing PQCI's and procedure for new construction areas will enhance the respective inspection and construction processes. This item is closed. (CLOSES ITEM 64-7)

Item 83-25 - MPQAD Welding Audit.

J. McMaster provided the Assessment Team with a copy of the MPQAD Welding audit report. (CLOSES ITEM 81-8)

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

Held at Midland Site  
Midland, Michigan  
April 20, 1984

Present For:

Consumers Power

R. Wieland

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD

J. Moran

Stone & Webster

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 83-26 - Auxiliary Building Underpinning Activities.

Excavation of the E5 pier shaft has begun.

All major structural sections have been set into place for the Level C wales in the east access shaft.

Piers E9/10 were rejaacked for load verification.

(INFORMATION ITEM)

Item 83-27 - SWPS Underpinning Activities.

J. Fisher stated that welding of wale gusset plates and shims for the soldier pile wall along the east side of the SWPS was in progress. Full penetration welds are required for the gusset plates and shims. This requirement has delayed further excavation below the first level wales on the east side of the SWPS until later next week. (INFORMATION ITEM)

Item 83-28 - Direct Hire Work.

J. Fisher reported that direct hire work on the BWST ring foundations and cathodic protection has begun. Work in the Unit 2 HVAC foundation pad will commence once the work package has been approved by CP Co. (INFORMATION ITEM)

New Items

No new items were discussed.

Response Item

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

Held at Midland Site  
Midland, Michigan  
April 20, 1984

Item 83-29 - Receipt Inspection of E/W5 Grillages.

In response to the Assessment Teams question regarding receipt inspection of the E/W5 grillages, J. Fisher stated that receipt inspection has not been performed. However, the established schedule for inspection of the grillages does provide for timely inspection of the grillages prior to the scheduled installation. (CLOSES ITEM 83-20)



COPY

Copy to:  
DLavelle (enc) Bechtel Corp.  
ECvikl (enc) Bechtel Corp.

PRINCIPAL STAFF			
RA	has	DRP	
D/RA		DE	
A/RA		DRMSF	
RC		DRMA	
PAO		SCS	
SGA		ML	
ENF		File	has

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

May 2, 1984

J.O. No. 14358  
Ref. MPF 84

Attention: Mr. Cook

DOCKET NO. 50-339/330  
MIDLAND PLANT UNITS 1 & 2  
INDEPENDENT ASSESSMENT OF UNDERPINNING  
REPORT NO. 84

A copy of the Independent Assessment of Underpinning Weekly Report No. 84 for the period of April 22, 1984 through April 28, 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) 589-2067.

*DLavelle for AS Lucks*

A. Stanley Lucks  
Project Manager

Enclosures  
ASL/pd

cc:  
JHarrison (enc), US NRC Glen Ellyn, IL  
Grace Dow Memorial Library (enc)  
DQuamme (enc) CP Co Midland (site)  
JMooney (enc) CP Co Jackson  
JMeisenheimer (enc) MPQAD Midland (site)

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

Weekly Report No. 84

April 22, 1984 through April 28, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	4/26 - 4/28
D. Benvie	4/23 - 4/28
D. Zito	4/23 - 4/28
W. Kilker	4/23 - 4/27
S. Lucks	4/26

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	4/26 - 4/28
B. Metros	4/22 - 4/24

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
4/23 - 4/27	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting
4/24	Consumers Power Bechtel MPQAD Stone & Webster	Project Soils Meeting
4/27	Stone & Webster Consumers Power Bechtel MPQAD	Interorganizational Meeting
4/27	Stone & Webster Consumers Power Bechtel MPQAD	Document Control Information Meeting

Underpinning and Remedial Soils - Construction

Pier E.7: Excavation of the pier has begun. The type of soil encountered during initial excavation was judged to be unsuitable for bellling. As a result, the alternate design consisting of a straight pier with an enlarged shaft area will be implemented.

Pier E5: Drifting to the reactor containment for installation of the E5 grillage was completed. Pier excavation progressed to the top of the bell and the ring beam was installed. Excavation of the drop pit for installation of the E5 grillage support columns at the reactor containment is in progress.

Kc4-Kc5 and Kc9-Kc8 Drifts: Excavation of these drifts was completed through to the UATs. Excavation of the Kc5 and Kc8 piers is scheduled to begin next week.

Piers CT 3/10: Excavation of the drop pits for piers CT 2/11 was completed allowing drifting to piers CT 3/10 to commence.

Pier W5: Pier excavation progressed to the top of the bell and installation of the ring beam was completed. Excavation of the drop pit required for installation of the W5 grillage support columns at the reactor containment is in progress.

Pier W17: Excavation of the pier was completed to founding grade. Bell excavation is scheduled to start this week.

Access Shaft Level "C" Wales: Alignment and fitup of the Level C wales continued for the east and west access shafts.

SWPS: Installation of the upper level wales and support struts has been completed on the east side of the SWPS. Excavation below the upper level of wales is in progress on the east side. Embedded and surface mounted strut plates and strut installation for support of the upper wales continued on the north and west side of the SWPS.

BWSTs: Construction of the ring beam addition for both tanks is in progress.

Cathodic Protection: Trench excavation for installation of cathodic protection is in progress.

#### Assessment Team Observations - Construction

The level of activity associated with the Auxiliary Building underpinning has increased significantly during the past two weeks. Construction has started on eight piers. Excavation and lagging installation for piers E/W5 and E/W17 was performed in accordance with procedural requirements. The Contractor was careful to minimize over excavation both horizontally and vertically. Excavation was followed closely by lagging installation, ensuring that the height of unsupported soil within the pier excavations did not exceed the specified amount. Backpacking behind the lagging was tamped firmly and evenly into place. In those areas of the W17 pier where over excavation behind the lagging exceeded the design requirements, the Subcontractor placed grout in accordance with the procedures. Adequate measures were taken by the Subcontractor to control and remove water seepage in the E5 and W17 pier excavations, minimizing softening of the in-place soil.

Installation of the drift set adjacent to the reactor containment wall for the E5 drift was observed by the Assessment Team. The contractor used both manual and optical survey methods to maintain alignment throughout the installation process. Installation and torquing of the drift set expansion anchors to the required tension completed the satisfactory installation of this drift set.

As part of the direct hire work for 1984, the Contractor has resumed work on the Borated Water Storage Tanks (BWSTs). The Assessment Team observed the Contractor perform a status assessment of the work completed to date on the ring beam additions at the BWSTs. This verification process consists of checking the installed concrete reinforcing steel for proper sizing, spacing and clear cover. The Assessment Team believes that this reverification process is a prudent measure on the part of the contractor considering the length of time work on the BWSTs had been discontinued.

#### Assessment Team Observation - QA/QC

The Assessment Team observed certification of the Nelson stud welding machine and the machine operator. As part of the certification test, the operator was required to weld a series of 10 Nelson studs. MPQAD measured the energy output of the welding machine during welding of each stud to verify that the machine output was steady and constant. Finally, the Nelson studs were strength tested by bending the studs 90° from their original position. None of the welded studs failed, concluding the successful certification of the welding machine and the operator.

MPQAD inspection of drift set expansion anchors and anchor bolts for the Level C wale support plates was overviewed by the Assessment Team. The inspector ensured that the anchor and bolt holes were drilled to the proper depths. The inspection also verified that the anchors and bolts were tensioned to the appropriate design loads with calibrated tensioning equipment. After the installations were completed, the inspectors marked the anchor nuts with an adhesive to aid in examining the anchors for signs of loosening during subsequent inspections. The Assessment Team concludes that the MPQAD inspections of the expansion anchor and anchor bolt installations were thorough. The thoroughness observed indicates that the MPQAD inspectors are sufficiently knowledgeable of design and procedural requirements for expansion anchor and anchor bolt installation.

#### Work Activity Packages

No work activity packages were overview or active during the past week.

#### 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>
22	Resident Engineering Document Control	(Opened) (Closed) 2/21/84
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 open 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 which have been Closed this week are also listed.

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
64-10	Trend Analysis	Open
71-17	Computerized Civil Drawing Register	Open
74-21	US Testing Corrective Action	Open
79-26	Upper Leveling Plates	Open
79-28	SWPS Backpacking Material	Open
79-34	SWPS Backpacking Placement	Open
81-21	BOP Construction Verification of Soils Work	Open
82-3	Surface Voids in Grout	Open
82-9	Trend Analysis Update	Open



Midland Plant

Units 1 &amp; 2

## Independent Assessment of Underpinning

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
83-17	Crackmapping Subcontractor Audit	84-25
84-12	Diesel Fuel Oil Lines	Open
84-13	SWPS Phase II Cofferdam	Open
84-20	Design Drawing Requirements for BWST Ring Beam Addition	Open
84-21	Repair of BWST Ring Beam Cracks	Open
84-22	BWST Concrete Reinforcing Steel	Open
84-23	BWST Corrosion Protection and Waterproofing	Open
84-24	Repair of Concrete Surface Imperfections of the BWSTs	Open

D.A. Benzie for W. E. K. K. K.  
Project Engineer

D.A. Benzie for A.S. Lucke  
Project Manager

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

Held at Midland Site  
Midland, Michigan  
April 23, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher	None	D. Benvie
	J. Kelleher		D. Zito
	E. Cvikl		<u>Parsons Brinckerhoff</u>
			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 84-1 - Auxiliary Building Underpinning Activities.

Excavation of the drop pits for CT 2/11 is almost complete. Drifting to CT 3/10 will commence upon completion of the CT 2/11 drop pits.

Excavation of the Kc4 to Kc5 drift has been completed through to the west UAT.

Excavation of the Kc9 to Kc8 drift continued. The drift heading is approximately 8' from the east UAT.

The drift excavation for the W5 grillage has been completed. Excavation of the W5 pier is scheduled to begin today.

Drifting to the reactor containment for the E5 grillage continued. Excavation of the E5 pier is in progress.

Excavation of the W17 pier shaft has been completed to founding grade. Bell excavation is scheduled to start today.

Drift excavation for the E17 pier has been completed.

Grouting of the Level C wale support plates has begun in the east access shaft.

(INFORMATION ITEM)

Item 84-2 - SWPS Underpinning Activities.

J. Fisher reported that installation of the large embedded strut plate on the SWPS is scheduled for today. Grouting of the strut plates along the east side of the SWPS has been completed. Further excavation on the east side of the SWPS below the first level of wales will begin shortly. (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
April 23, 1984

Item 84-3 - Upper Leveling Plates.

J. Kelleher stated that the welding demonstration to evaluate the effect of using smaller welds for the upper leveling and bearing plate assembly was completed on Friday. In the demonstration, one side of the assembly was welded with a 1/2 in. weld while the other side used a 1/4 in. weld. As expected, warping was less on the side where the 1/4 in. weld was used. Engineering is presently evaluating the results of the test. (Item 79-26 remains OPEN) (INFORMATION ITEM)

New Items

Item 84-4 - Slotted Holes for Tubular Steel Lagging.

D. Zito asked if the NCR written due to fabrication of oversized holes for pieces of tubular steel lagging had been resolved. J. Fisher responded that the NCR is presently being dispositioned to use as is. (CLOSED 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  
April 24, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD

R. Sevo

Stone & Webster

D. Benvie  
D. Zito  
W. Kilker

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 84-5 - Auxiliary Building Underpinning Activities.

Excavation of the E17 and W5 piers has been initiated.

Excavation of the drop pits to piers CT 2/11 have been completed.

The drift excavation for the E5 grillage is complete.

Grouting of the Level C wale support plates has begun in the west access shaft.

(INFORMATION ITEM)

New Items

Item 84-6 - Drift for the W5 Grillage.

W. Kilker asked why the spaces between the wood lagging have been sealed for that portion of the W5 drift closest to the reactor containment. J. Fisher responded that some over excavation behind the lagging had occurred in this section of the drift. As a result, the area behind the lagging will be grouted rather than backpacked. The spaces between the lagging have been sealed to prevent any loss of grout during placement. (CLOSED ITEM)

Item 84-7 - Loading of E/W5 Grillages.

D. Benvie reviewed the loading sequence for the E/W5 piers and grillages and noted that unlike the E/W8 piers, the E/W5 piers will not be preloaded prior to loading of the grillages. He asked if there was a specific reason for not preloading the piers. E. Cvikl and J. Fisher responded that the E/W8 piers were preloaded because of additional loads in that area of the turbine building. These additional loads are not present in the vicinity of the E/W5 piers. (CLOSED ITEM)

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

Held at Midland Site  
Midland, Michigan  
April 24, 1984

Item 84-8 - Cathodic Protection.

D. Benvie asked what specific work is ongoing associated with cathodic protection. J. Fisher responded that trenching required for installation of the cathodic protection is presently underway. It is anticipated that soil drilling of boreholes associated with the cathodic protection will begin in 4 to 6 weeks. (CLOSED 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  
April 25, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher	R. Sevo	D. Benvie
	J. Kelleher	J. McMaster	D. Zito
	E. Cvikl		W. Kilker
			<u>Parsons Brinckerhoff</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

Status Items

Item 84-9 - Auxiliary Building Underpinning Activities.

Placement of grout in the over excavated area behind the W5 drift lagging is complete.

The concrete mudmat for the W17 pier base has been placed.

Installation of the steel collar frame for the drift to pier CT 3 will begin today.

The soil encountered during excavation of the E17 pier was judged to be unsuitable for bellling. As a result, the alternate design consisting of a straight pier with an enlarged shaft area will be implemented.

(INFORMATION ITEM)

Item 84-10 - SWPS Underpinning Activities.

J. Fisher reported that extension of the bentonite seal at the joint between the SWPS and the Circulating Water Intake Structure will start today. The bentonite seal is being extended to prevent inflow of water through the joint from beneath the seal.

It was reported that preparations are being made to allow the use of wood lagging in place of tubular steel lagging for the soldier pile wall in those areas where the lagging span is less than 8 feet. (INFORMATION ITEM)

New Items

Item 84-11 - FSO Controlled Document Review.

J. Fisher reported that a review of FSO Controlled Documents will be performed this weekend by the FSO Quality Engineer. In the future, the FSO Quality Engineer will perform a review of the FSO controlled documents once every two months. FSO will continue to "self-audit" their controlled documents once a month. (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
April 25, 1984

Item 84-12 - Diesel Fuel Oil Lines.

D. Benvie asked for the status on initiation of work for the diesel fuel oil lines. J. Fisher will respond. (OPEN ITEM)

Item 84-13 - SWPS Phase II Cofferdam.

D. Benvie requested that the Assessment Team be provided with details of the proposed alternative under consideration for the SWPS Phase II cofferdam. The cofferdam is required for rebidding of the service water lines. J. Fisher 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  
April 26, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
D. Puhalla	J. Fisher	R. Sevo	D. Benvie
	J. Kelleher	J. McMaster	D. Zito
	E. Cvikl		W. Kilker
			P. Majeski
			S. Lucks
			<u>Parsons Brinckerhoff</u>
			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 84-14 - Auxiliary Building Underpinning Activities.

Excavation of the drop pit for installation of the W5 grillage support columns at the reactor containment has begun.

Backfill grout was placed in the W17 bell due to minor soil sloughing.

Excavation of the Kc9 to Kc8 drift has been completed to the east UAT.

(INFORMATION ITEM)

Item 84-15 - SWPS Underpinning Activities.

J. Fisher reported that the large embedded strut plate on the SWPS north wall has been set into place. Welding of the soldier pile wall struts to the strut plate is in progress. (INFORMATION ITEM)

Item 84-16 - SWPS Phase II Cofferdam and Diesel Fuel Oil Lines.

J. Fisher reported that Bechtel will present to CP Co on 4/27/84 details of the proposed alternatives under consideration for the SWPS Phase II cofferdam. Also, the status of the work associated with this diesel fuel oil line will be discussed. (Item 84-13 and 84-14 remains OPEN) (INFORMATION ITEM)

New Items

Item 84-17 - Weekly Report # 83.

The text of Weekly Report # 83 was reviewed. It was determined that all open items had been previously identified. (INFORMATION ITEM)

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

Held at Midland Site  
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Item 84-18 - Central Document Control Center Weekly Meeting.

J. McMaster stated that a weekly meeting will be held starting tomorrow at which, Central Document Control personnel will meet with MPQAD to discuss the status of the Central Document Control upgrading process. The Assessment Team will also attend this meeting. The meeting will serve as a forum for presenting and answering questions related to Central Document Control activities. (INFORMATION ITEM)

Response Items

No response items were addressed.

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

Held at Midland Site  
Midland, Michigan  
April 27, 1984

Present For:

Consumers Power

G. Murray  
R. Wieland

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD

J. McMaster  
R. Sevo

Stone & Webster

D. Benvie  
D. Zito  
W. Kilker  
P. Majeski

Parsons Brinckerhoff

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 84-19 - Auxiliary Building Underpinning.

Installation of the steel collar frame in the CT 11 drop pit is in progress.

Excavation of the drop pit for installation of the E5 grillage support columns at the reactor containment has begun.

(INFORMATION ITEM)

New Items

Item 84-20 - Design Drawing Requirements for BWST Ring Beam Additions.

D. Zito discussed the design drawing requirements for the ring beam addition at each of the BWSTs. It was noted that the drawings indicate that concrete for each ring beam addition will be placed to the same elevation as the top of the existing ring beam and valve pit. However, the actual conditions do not match these indicated on the design drawing in that the top of the existing ring beam is approximately 1.5 inches higher than the top of the valve pit. The Assessment Team requested FSO to evaluate what impact if any, this elevation inconsistency will have at the interface of the ring beam addition and the valve pit for each BWST. (OPEN ITEM)

Item 84-21 - Repair of BWST Ring Beam Cracks.

D. Zito asked if cracks in the existing ring beam greater than 10 mils have been mapped and repaired. J. Kelleher responded that cracks greater than 10 mils have been mapped and repaired in accordance with engineering requirements. The Assessment Team asked if the cracks on the underside of the valve pit top slab will require repair. J. Fisher will respond. (OPEN ITEM)



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Item 84-22 - BWST Concrete Reinforcing Steel.

D. Zito noted that reinforcing steel placed in the low area on the west side of the Unit No. 1 BWST is continuously wet and dirty. He asked what action is planned to correct this condition. J. Fisher will respond. (OPEN ITEM)

Item 84-23 - BWST Corrosion Protection and Waterproofing.

D. Zito discussed corrosion protection and waterproofing requirements for the BWSTs. It was pointed out that the channel sections being used to support reinforcing cage above the concrete mudmat may contribute to corrosion of the reinforcing cage.

The need for and condition of the existing waterstop was discussed. The waterstop has been damaged in the vicinity of the valve pits for each of the BWSTs. The Assessment Team requested FSO to evaluate what effects if any, these conditions will have on the corrosion protection and waterproofing for the BWSTs. (OPEN ITEM)

Item 84-24 - Repair of Concrete Surface Imperfections of the BWSTs.

D. Zito stated that project specifications require that surface imperfections for formed concrete be repaired as soon as practical after removal of forms. It was noted that minor surface imperfections on those portions of the Unit 2 BWST ring beam addition placed last year have not been repaired. The Assessment Team requested FSO to review the intent of the specification in regards to timely repair of the surface imperfections. (OPEN ITEM)

Response Items

Item 84-25 - Crackmapping Subcontractor Audit.

E. Cvikel provided the Assessment Team with a copy of the MPQAD Report summarizing the results of their audit of the crackmapping subcontractor (WJE). (CLOSES ITEM 83-17)