



STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

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

August 31, 1983

J. O. No. 14358
Ref. MPF 49

Attention Mr. R. Cook

RE: DOCKET NO. 50-339/330
MIDLAND PLANT UNITS 1 & 2
INDEPENDENT ASSESSMENT OF UNDERPINNING
REPORT NO. 49

A copy of the Independent Assessment of Underpinning Weekly Report No. 49 for the period of August 21, 1983 through August 27, 1983 is enclosed with this letter. Included as attachments, are the minutes of the daily meetings held during the week between members of the Assessment Team and Site Engineering, Construction, and Quality Assurance personnel.

If you have any questions with respect to this report, please contact me at 617-589-2067.

Very truly yours,

A. Stanley Lucks
Project Manager

Enclosures

ASL/pd

SEP 6 1983

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

Weekly Report No. 49

August 21, 1983 through August 27, 1983

Personnel on Site

Stone & Webster Michigan, Inc.

A. Scott	8/22 - 8/27
P. Barry	8/24 - 8/27
W. Kilker	8/22 - 8/27
B. Holsinger	8/22 - 8/24
J. Springer	8/23 - 8/27
W. Craig	8/24 - 8/26

Parsons, Brinckerhoff Michigan, Inc.

F. Balsamo	8/22 - 8/26
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Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
8/22 - 8/26	Stone & Webster Bechtel Consumers Power Parsons	Daily Meetings
8/25	Stone & Webster Bechtel Consumers Power	Weekly Construction Schedule Meeting
8/27	Stone & Webster Consumers Power Bechtel	NCR Training Session

Underpinning and Remedial Soils Activities

E8 Grillage: The installation activity at the containment end was halted due to a NCR on a weld qualification. The grillage beams were moved temporarily into location to evaluate the fit-up.

Pier KC10: The bell excavation was completed and the mudmat placed. The bell soils were subject to minor unraveling and therefore were sheeted for stability.

W8 Grillage: The W8 grillage installation activities were similiar to those at E8.

Pier KC3: The pier excavation was advanced to a depth of 10 ft. of which approximately 8 ft. was in unreinforced concrete and the remainder in the fill soils.

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Independent Assessment of Underpinning

E/W Access Shaft: Soil stabilization (chemical grouting) was performed at the East and West access shafts to control groundwater seepage. The mass excavation to E1 597 was initiated at both locations.

SWPS: Installation of the interior wells in the service water bays was completed. Exterior well and soldier pile installation continued. An abandoned exterior well adjacent to the structure was grouted.

BWST: Shear connector installation continued to near completion. The reinforcing steel for the foundation modification arrived at the site and is being held awaiting disposition of a documentation related NCR.

Assessment Team Observations - Construction

The use of a multiple pass fillet weld that was not a prequalified weld nor one that had been qualified on site, resulted in a NCR that impeded the progress of the grillage installations at E/W8. The use of weld technique sheets similar to that shown in AWS D1.1-80 for each type of weld (as suggested by the Assessment Team in Weekly Report No. 30) would eliminate this type of non-conformance.

At pier KC3 the Contractor closed up the lagging spacing and placed etha-foam between the lagging and the fill concrete to assure that the pier concrete does not bond to the surrounding mass of fill concrete. In the bell area of pier KC10 the Contractor prudently elected to support the soil after minor unraveling occurred.

Assessment Team Observations - MPQAD

1. The QC inspection of the torquing of leveling plate anchor bolts for the W8 grillage was performed in accordance with the requirements of the PQCI.
2. The Assessment Team reviewed a random sample of 100 NCRs for conformance to the Contractor's procedure for NCRs and whether the Engineering disposition appeared adequate. It is the Team's opinion that the procedure is being followed correctly and that the disposition's are adequate.
3. CPCo has taken initial steps to improve communications between FSO and MPQAD. The Assessment Team believes that continued improvement in communications is essential to reduce the number of NCR's and their disposition time.

Work Activity Packages -

The Assessment Team reviewed the WAP-54 on installation of drifts/piers KC4 and submitted 9 questions. Resolution of the comments/question's of WAP's 50 and 51 remain open.

Nonconformance Identification Reports

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

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Independent Assessment of Underpinning

Open Items

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

<u>Item No.</u>	<u>Description</u>	<u>Closure Reference</u>
W.R. 25, pg. 5	Commitment to assess training and personnel records.	Open
45-8Q	Discussion on Mechanism of Identifying Quality Concerns.	Open
48-4Q	Structural Backfill PQCI Adequacy	Open
W.R. 48, pg. 3	Backfill Specification Comment	49-6
49-6	Clarification of Structural Backfill Specification Requirement	Open
49-8	Impact on Welding Nonconformance on E/W8 Grillage Installation	Open
49-31	E8 Grillage Bearing Assembly	Open

Paul Barry for W.K.
Project Engineer

allg
Project Manager

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

Held at Midland Site Location
Midland, Michigan
August 22, 1983

Present For:

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

Purpose

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

Discussion

Item 49-1 - E/W8 Grillage Beam Installation Sequencing.

There was a general discussion on the upcoming beam installation. J. Fisher stated that the intent is to bring in all of the beams and place them in temporary positions rather than final consecutive placement of each beam. Once all beams are in, the final placement will take place. (CLOSED ITEM)

Item 49-2 - NCR on Stitch Welding of Beam Base Plates.

There was a general discussion on a NCR written last week on the improper placement of stitch welds along the plate edge. J. Fisher reported that Construction and MPQAD had discussed the various parties interpretation of the AWS code pertaining to this type of welding and that the decision was that the MPQAD interpretation would govern. Therefore an Engineering disposition was required and is being pursued. There will likely, however, be a future meeting between the parties to further discuss the interpretation of the requirements. (CLOSED ITEM)

Item 49-3 - NCR Generated by Assessment Team NIR # 14.

B. Holsinger stated his concern over the one week delay in placing Hold Tags on certain grillage hardware to prevent inadvertent use. J. Fisher replied that FSO has not been the group to actually place tags on nonconforming items even if FSO writes the nonconformance. Rather, QC has always installed tags. B. Holsinger said MPQAD has already been notified of the concern over the time delay. (Refer to Assessment Team Weekly Notes Item 48-1Q) (CLOSED ITEM)

Item 49-4 - E/W8 Grillage Upper Leveling Plate Grouting.

W. Kilker and A. Scott commented that the placement of the flowable grout for the various E/W8 grillage upper leveling plates was, in their opinion, well done. Stripping of the formwork confirmed that the material had flowed uniformly leaving no significant voids. (CLOSED ITEM)

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

Held at Midland Site Location
Midland, Michigan
August 22, 1983

Item 49-5 - KC 2/3 - KC10/11 Drift.

G. Murray reported that the FCR allowing the drift to be completed prior to pier KC2 or KC10 load transfer will not be approved pending NRC review.
(CLOSED ITEM)

Item 49-6 - Clarification of Structural Backfill Specificalion Requirement.

W. Kilker stated that a portion of the section on backfill placement was difficult to interpret. E. Cvikel explained that the intent of this section was to require horizontal placement of the fill. However, Engineering felt that the wording as included did not require alteration. (OPEN ITEM)

Item 49-7 - Cumulative Effect on AUM Criteria.

In response to an Assessment Team comment, E. Cvikel stated the 30 mil allowable upward movement criteria could occur during initial jacking or any re-jacking and cumulative effects would not be taken into account. That is, 30 mils could occur during each jacking operation. The turbine building mat is considered flexible enough to handle the anticipated movements. However, Engineering will review the concern for the relatively stiff EPA and Control Tower mats. (OPEN ITEM)

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

Held at Midland Site Location
Midland, Michigan
August 23, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
G. Murray	J. Fisher	R. Sevo	A. Scott
J. Schaub	J. Gaydos		W. Kilker
	E. Cvikl		B. Holsinger
			J. Springer
			<u>Parsons</u>
			F. Balsamo

Purpose

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

Discussion

Item 49-8 - Impact of Welding Nonconformance on E/W8 Grillage Installation.

J. Fisher reported that on the drop pit column cap beam a non-qualified weld had been installed. The Contractor is coordinating the issuance of a Conditional Release with CPCo to allow the work to proceed while the welding issue is resolved. G. Murray said CPCo will approve the use of the Conditional Release only in situations where no procedural changes are anticipated. J. Fisher replied that this case will not invoke procedural changes. J. Schaub recommended FSO evaluate if similar situations exist for other weld sizes. (OPEN ITEM)

Item 49-9 - Grillage Stabilizer Plate Hole Tolerances.

A. Scott questioned if the stabilizer plates were unique from the other grillage leveling plates in terms of hole tolerances. J. Fisher will respond. (OPEN ITEM)

Item 49-10 - QC Coverage of Proposed Grouting Activity.

A. Scott questioned if QC would be able to support the grouting activity proposed for the west access shaft water pit. R. Sevo explained that the inspection of this grouting could be covered under the existing PQCI but inspection of CT pier grouting required retraining to a revised PQCI. (CLOSED ITEM)

Item 49-11 - E/W8 Grillage Lower Bearing Plates/Cap Beam Fit-up.

A. Scott noted that the bearing plates resting on the cap beams do not bear uniformly. E. Cvikl will review the requirement. (OPEN ITEM)

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

Held at Midland Site Location
Midland, Michigan
August 24, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
D. Puhalla	J. Fisher	R. Sevo	A. Scott
	J. Gaydos		W. Kilker
	E. Cvikl		J. Springer
			P. Barry
			W. Craig
			<u>Parsons</u>
			F. Balsamo

Purpose

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

Discussion

Item 49-12 - Stabilizer Plate Hole Tolerance.

J. Fisher reported that an FCR is being prepared to designate larger holes to be drilled thereby allowing reasonable location tolerance.
(CLOSED OUT ITEM 49-9)

Item 49-13 - Status of KC3/10 Piers.

J. Fisher said a bond breaker zone will be included between the lagging and fill concrete on pier KC3. The bell excavation on pier KC10 will commence today now that concrete admixture certifications are verified. This verification will allow the placement of concrete. (CLOSED ITEM)

Item 49-14 - Status of Conditional Release on E/W8 Grillage Welding Nonconformance.

J. Fisher reported the request for a Conditional Release was withdrawn and the work will not continue on beam installation until the non-qualified weld is properly qualified. (CLOSED ITEM)

Item 49-15 - The Y2/Z2 Zone Excavation.

J. Fisher reported the Y2/Z2 zone excavation work may commence as early as today. (CLOSED ITEM)

Item 49-16 - Assessment Team Evaluation of Documentation Processing.

W. Kilker introduced W. Craig to the group. Mr. Craig will be on site up to 10 days to perform an evaluation of the processing of FCR, DCN, SCN and NCR type control documents. (CLOSED ITEM)

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

Held at Midland Site Location
Midland, Michigan
August 24, 1983

Item 49-17 - Hold Tag and Supplemental Descriptive Forms.

A. Scott noted that at times when QC Hold Tags have been removed recently after nonconformance disposition, the supplemental sheets have remained on the tagged hardware. J. Fisher said these forms should also be removed to avoid confusion. (CLOSED ITEM)

Item 49-18 - Access Pit Grouting.

W. Kilker questioned why the Contractor appeared to be readying a completed pit area for grouting in addition to the pit with the water seepage conditions. J. Fisher will investigate. (OPEN ITEM)

Item 49-19 - Venting of Shear Key Zone of Stabilizing Plates.

A. Scott questioned if there are provisions for air venting this area during grout placement. 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 Location
Midland, Michigan
August 25, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
G. Murray	J. Fisher	J. McMaster	A. Scott
	J. Gaydos		W. Kilker
	E. Cvikl		J. Springer
			W. Craig
			P. Barry
			<u>Parsons</u>
			F. Balsamo

Purpose

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

Discussion

Item 49-20 - BWST Concrete Imperfections.

A. Scott asked if surface imperfections on portions of the sandblasted BWST foundations would require chipping prior to additional concrete placement. E. Cvikl will respond. (OPEN ITEM)

Item 49-21 - Block-out of Grillage Upper Leveling Plates.

P. Barry questioned if the plate areas protruding onto the FIVP had been blocked-out during installation. J. Fisher replied that block-outs were intended for these areas and that on the West unit grout terminates at the FIVP/EPA joint. If not already in a similar condition, the East unit plate grout will also be removed under any FIVP overlap area. (CLOSED ITEM)

Item 49-22 - Shimming of Grillage Lower Bearing Plates.

E. Cvikl reported an FCR has been processed designating the shim requirements to provide full bearing for the plates on the cap beams. (CLOSES OUT ITEM 49-11)

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

Held at Midland Site Location
Midland, Michigan
August 26, 1983

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
G. Murray	J. Fisher	R. Sevo	A. Scott
J. Schaub	J. Caydos		W. Kilker
	E. Cvikl		J. Springer
	J. Nation		F. Barry
			<u>Parsons</u>
			F. Balsamo

Purpose

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

Discussion

Item 49-23 - Bond Breaker on Pier KC3.

J. Fisher reported that within the fill concrete excavations the lagging section will be closed-up to inhibit the flow of concrete behind the lagging. After load transfer any void areas behind the lagging will be filled from the surface with sand. This procedure should effectively isolate the pier from the fill concrete. (CLOSED ITEM)

Item 49-24 - Resolution of NCR on Weld Qualification.

J. Fisher reported the weld size is now qualified and the Mergentime procedure is being revised. Subsequently the NCR can be dispositioned and the work on grillage installation proceed. (CLOSED ITEM)

Item 49-25 - Shear Key Zone Grouting.

In response to an Assessment Team question, J. Fisher said the shear key area on the stabilizer plate grillage tube will be vented to allow air escape during grouting. (CLOSES OUT ITEM 49-19)

Item 49-26 - Soil Stabilization of Access Pit.

J. Fisher said the West side was stabilized at the suggestion of Mergentime. The East side will be done today. (CLOSES OUT ITEM 49-18)

Item 49-27 - BWST Concrete Imperfections.

E. Cvikl said Resident Engineering had examined the condition of the sandblasted areas. It was determined that the sandblasting had not created a condition in the concrete pore holes that require corrective action. (CLOSES OUT Item 49-20)

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

Held at Midland Site Location
Midland, Michigan
August 26, 1983

Item 49-28 - Cumulative Effect on AUM Criteria.

E. Cvikl reported that Project Engineering has evaluated the effect of cumulative upward movement on the EPA and Control Tower slabs. The EPA can withstand up to 5 times the AUM without distress and the Control Tower is so heavy no significant upward movement is anticipated. (CLOSES OUT ITEM 49-7)

Item 49-29 - NCR Disposition Cycle Discussion.

J. Fisher stated that the Weekly Coordination meetings are effective in addressing QC NCRs but improvement is needed in the timeliness of resolving QA NCRs. (CLOSES ITEM)

Item 49-30 - Revised NCR Form.

R. Sevo said a revised NCR form is forthcoming. Training of personnel to the use of this form is underway. J. Fisher and E. Cvikl requested that FSO and Resident Engineering personnel receive training in the form usage also. (CLOSED ITEM)

Item 49-31 - EB Grillage Beam Bearing Plate.

A. Scott questioned why it was necessary to remove the beam from the " hole " and change the assembly plate and why the two parts of the assembly are considered a matched set. (OPEN ITEM)

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

Held at Midland Site Location
Midland, Michigan
Week of August 24, - 27

No Weekly MPQAD meeting was held this week.