



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 17, 1983

J. O. No. 14358
Ref. MPF 47

Attention Mr. R. Cook

RE: DOCKET NO. 50-329/330
MIDLAND PLANT - UNITS 1 & 2
INDEPENDENT ASSESSMENT OF UNDERPINNING
REPORT NO. 47

A copy of the Independent Assessment of Underpinning, Weekly Report No. 47 for the period of August 7, 1983 through August 13, 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,

AS Lucks

A. Stanley Lucks
Project Manager

Enclosures

ASL/pd

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

Weekly Report No. 47

August 7, 1983 through August 13, 1983

Personnel on Site

Stone & Webster Michigan, Inc.

P. Barry	8/11 - 8/13
W. Kilker	8/8 - 8/13
B. Holsinger	8/8 - 8/11
S. Lucks	8/11 - 1/12
P. Majeski	8/10 - 8/13

Parsons, Brinckerhoff Michigan, Inc.

J. Ratner	8/10 - 8/13
F. Balsamo	8/10 - 8/12

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
8/8 8/10 8/12	Stone & Webster Bechtel Consumers Power Parsons	Daily Meetings
8/10	Stone & Webster Bechtel Consumers Power	Weekly Engineering Construction Coord- ination Meeting
8/12	Stone & Webster Bechtel Consumers Power	Direct-hire Personnel Training Commitments

Activities

Construction:

Pier E8: Load transfer to turbine building and routine rejackng completed.

E8 Grillage: Post and cap beam installed on edge of containment mat.

Pier E10: The Pier remained on active jacking throughout the week to obtain engineering information.

KC-10 Drift: Drift excavation and drift support system nearly complete.

Pier W8: Load transfer to turbine building completed. Three day period of routine rejackng in progress.

W8 Grillage: Post and cap beam installed on edge of containment mat.

Pier W10: The pier remained on active jacking throughout the week to obtain engineering information.

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KC-3: Drift excavation begun but work is slow because excavation face is 100 percent fill concrete.

SWPS: Dewatering wells and soldier pile installation continued. Work on service water pipe replacement was stopped to re-evaluate construction procedures and retrain Contractor direct hire and supervisory personnel.

BWST: Installation of shear connector bolts continued. Backfilling was initiated. Work curtailed late in the week to permit re-evaluation of construction procedures and retrain Contractor direct hire and supervisory personnel.

Quality Control

1. Visually checked welding for comparison with welding inspection reports for E/W8 transfer frames.
2. Attended training session for PQCI 1,018 (6), installation of structural steel.
3. Reviewed material receiving report.

Observations

Construction: A number of NCR's written on welding performed in the UAT's resulted in FSO's voluntary suspension of Contractor direct hire work. The purpose of this suspension was to allow time to evaluate and revise construction and supervisory methods, and for retraining of direct hire and supervisory personnel. The NCR's apparently were as much a result of communication gaps between FSO personnel and between FSO and MPQAD as they were deficiencies in the work. The FSO response to this situation was proper and the contemplated changes are correct in the opinion of the Assessment Team.

During load transfer of E/W8 to the turbine building, a small upward movement of a few mils on the EPA was noted. Movement of this magnitude which is not excessive, can be expected. In fact, this movement reduced the differential settlement across the Auxiliary Building.

Quality Control

1. The welding inspection reports for the E/W8 transfer frames were found to be complete and accurate.
2. The training session for revisions to PQCI 1.018 (6), installation of structural steel, was complete and the presentation was clear.
3. A review by the Assessment Team of QCIR No. R-100 20818 resulted in NIR No. 14 because of two instances where nuts were supplied and accepted that do not meet the specified requirements.

Work Activity Packages

Resolution of the comments/question of WAP's 44,50 and 51 remain open.

Nonconformance Identification Report

<u>NIR No.</u>	<u>Description</u>	<u>Date</u>
14	Auxiliary Building Underpinning	(Opened) (Closed) 8/11/83

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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
W.R. 42, pg.3	Commitment to evaluate response to Grillage Installation PQCI.	Open
43-4Q	Receipt Package Inspection	Open
43-5Q	Grillage Installation Questions	Open
44-7	Request for Chronology of Events Surrounding Reoccurrence of Loose Washers on W8 N-S Bulkhead	Open
44-20	Resolution of a Question on the Adequacy of the Procedure on the Tieback and Strut Installation.	Open
44-2Q	Grillage Beam Receipt Inspection Package	Open
44-3Q	Status of Questions on Grillage Beam PQCI	Open
45-17	Existing Concrete Mix Slump Inadvertency Margin	47-19
45-7Q	Status of QA NCR on QC Certification	47-1Q
45-8Q	Discussion on Mechanism of Identifying Quality Concerns.	Open
46-14	Leveling Plate Overlap onto FIVP Mat	47-2

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<u>Item No.</u>	<u>Description</u>	<u>Closure Reference</u>
47-22	Direct Hire Work Retraining	Open

W. E. Kilker
Project Engineer

P. J. Barry for A. J. Jucko
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 8, 1983

Present For:

Consumers Power

D. Puhalla

Bechtel

J. Fisher

E. Cvikl

J. Gaydos

MPQAD

W. Lytle

Stone & Webster

W. Kilker

B. Holsinger

Parsons

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 47-1 - Status of E/W8 Load Transfer.

J. Fisher reported that rework on certain welding, completion of the instrumentation and the required FSO and QC inspections were completed over the weekend. Load transfer is expected to commence today. (CLOSED Item)

Item 47-2 - Leveling Plate FIVP Overlap.

E. Cvikl stated that measurements confirmed a slight overlap of the leveling plate nearest the containment from the EPA onto the FIVP mat. A FCR will likely be written to block out this corner prior to grout placement. (CLOSES OUT ITEM 46-14)

Item 47-3 - SWPS Well Installations.

J. Fisher reported 2 shifts are working again on well installations. However, due to recent commitments on work coverage by FSO Field Engineers, outside work will be done by day shift crews and inside the structure work by night shift crews. (CLOSED ITEM)

Item 47-4 - MPQAD Welding Consultant.

W. Kilker requested a status report on the activities of the consultant. W. Lytle will respond. (OPEN ITEM)

Item 47-5 - Status of Grillage Beam Rework.

W. Kilker requested the status of the grillage beam rework. J. Fisher will respond. (OPEN ITEM)

Item 47-6 - Material Storage Procedure.

W. Kilker reported that V. Madill questioned the clarity of the Level B storage requirement section of the SWP procedure on material handling, storing, and controlling. J. Fisher agreed the present structure of the section could be misleading. FSO 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 8, 1983

Item 47-7 - E8 Lower Leveling Plate Grout Repair.

W. Kilker questioned if the minor cosmetic-type grout repair (greatest dimension was 2 inches) required the same testing verification as an initial installation. For example, on this repair of a few cubic inches \pm 20 test specimens were taken. J. Gaydos replied that a less commonly used grout type (Set 45) was used and this usage probably resulted in the higher number of test specimens. In any case, procedural test requirements would not be any less for a repair than for an initial installation (CLOSED ITEM)

Item 47-8 - E/W8 Grillage Leveling Plates.

In response to a question by W. Kilker on the plate modification required to pressure grout the grillage leveling plates, J. Fisher stated an FCR is being processed and in addition a procedural change is required to designate fabrication changes. (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 9, 1983

No meeting was held on this date.

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

Held at Midland Site Location
Midland, Michigan
August 10, 1983

Present For:

<u>Consumers Power</u>	<u>Bachtel</u>	<u>MPQAD</u>	<u>Stone & Webster</u>
G. Murray	J. Fisher	None	W. Kilker
	E. Cvikl		P. Majeski
	J. Gaydos		
			<u>Parsons</u>
			None

Purpose

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

Discussion

Item 47-9 - Status of Grillage Installation.

All NPS fabricated materials have been released to the Subcontractor for installation. J. Fisher explained that FCRs have been prepared to address tolerances on the beam, frame, bracing and column installation. Discussions are on-going to understand the intent of the tolerances to avoid misinterpretations once the pieces are in-place. (CLOSING OUT ITEM 47-5)

Item 47-10 - Superplasticized Concrete.

J. Gaydos reported that the grout used to "slick" the pump lines in conjunction with the new mix design must be qualified. Completion of the testing is expected this week. (CLOSED ITEM)

Item 47-11 - Installation Accessories.

J. Fisher explained that installation accessories used by construction will not be shown on design drawings but rather will be designated on vendor drawings or field sketches. (CLOSED ITEM)

Item 47-12 - EPA Settlement Trends.

E. Cvikl reported the EPA portions of the auxiliary building moved upward a few mills during the recent load transfer of the E/W8 piers. In addition, the recent trend has been toward a significant reduction in the differential settlement rate across the auxiliary building. (CLOSED ITEM)

Item 47-13 - Inspection of UAT Work Platform Installation.

J. Fisher explained that the inspection of the welding at the UAT revealed a number of deficiencies. Discussions are underway within FSO to determine the cause of this situation and what action is required to prevent recurrence. (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 10, 1983

Item 47-14 - Clarification of Storage Requirements.

J. Fisher said the appropriate section of the SWP procedure will be clarified to more clearly reflect the material storage requirements.
(CLOSES OUT ITEM 47-6)

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

Held at Midland Site Location
Midland, Michigan
August 11, 1983

Present For:

Consumers Power

G. Murray

Bechtel

E. Cvikl
J. Gaydos

MPQAD

J. Moran

Stone & Webster

P. Majeski
P. Barry

Parsons

J. Ratner

Purpose

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

Discussion

Item 47-15 - Slope Layback.

J. Ratner asked if slope laybacks will be used in the future. G. Murray indicated that no additional laybacks are anticipated. Existing layback areas, which will be excavated in the future, have been left open. Laybacks which will not be excavated have been grouted. (CLOSED ITEM)

Item 47-16 - Service Water Pipes.

J. Ratner inquired about the schedule for completion for the service water pipes. J. Gaydos indicated that he did not have that information but would obtain it. (OPEN ITEM)

Item 47-17 - Carlson Meter Calibrations.

P. Barry stated that J. Darby requested a clarification to V. Verma's statement in Item 2 of the Notes of Daily Meeting from June 16, 1983. It was agreed that the statement should read " V. Verma stated that the meter tests conducted at WJE on the meters to be used in pier E/W8 will provide data to determine the acceptance criteria for the remaining Carlson meter calibrations." (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 12, 1983

Present For:

Consumers Power

G. Murray

Bechtel

E. Cvikl
J. Gaydos

MPQAD

G. Carpenter

Stone & Webster

W. Kilker
P. Majeski
P. Barry

Parsons

J. Ratner
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 47-18 - Status of Piers E/W8 Load Transfer.

J. Fisher reported that the load transfer has been completed on pier E8 but is still underway at pier W8. (CLOSED ITEM)

Item 47-19 - SCN on Existing Concrete Mix Design.

E. Cvikl stated the 1973 design date revealed the mix design slump was 5 inches. P. Barry replied this resolved the Team concern over the slump inadvertency margin. (CLOSES OUT ITEM 45-17)

Item 47-20 - KC3 Drift Concrete.

P. Barry questioned if a determination had been made of the status of the concrete in the upper portion of the drift cut. A well defined joint was not encountered at the usual elevation and a membrane was located some 3 ft. lower than normal. E. Cvikl stated Resident Engineering had evaluated the situation and determined structural concrete extended only to E1.610. (CLOSED ITEM)

Item 47-21 - Inspection of UAT Work Platform Installation.

J. Gaydos advised that FSO initially inspected the items in the UAT and marked it up for rework. FSO Civil Engineers reported that work was complete, but the FSO Welding Engineer had not gone back to reinspect the items. QC was called for the final inspection, resulting in the NCR. (CLOSES OUT ITEM 47-13)

Item 47-22 - Direct-hire Work Training.

J. Fisher reported that FSO is undertaking a program to further the training of all personnel assigned to this work in light of the recent UAT welding inspection problems. Until this action is completed no further direct hire work will be performed. J. Fisher will update. (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 12, 1983

Item 47-23 - NIR # 14 Issue.

P. Barry reported that NIR # 14 was issued today on the type of bolt nuts supplied with the NPS grillage beams and accessories. W. Kilker said the last statement on the NIR on "reportability" has been determined by the Assessment Team to be an unnecessary recommendation. That is, in the Team's opinion, the item is not reportable.
(CLOSED ITEM)

Item 47-24 - Service Water Pipe Repair Status.

In response to a previous question by J. Ratner, J. Fisher will supply the pipe repair schedule to the Assessment Team. (CLOSES OUT ITEM 47-16)

Notes of MPQAD Meeting
Independent Assessment of Underpinning
Midland Plant Units 1 & 2
Held at Midland Site Location
Midland, Michigan
August 9, 1983

Present For:

Stone & Webster

B. Holsinger

MPQAD

J. Meisenheimer

D. Horn

M. DeWitt

Purpose

This meeting is held each week to obtain information from MPQAD regarding the soils underpinning work at the Midland Plant Units 1 & 2.

Discussion

Item 47 - 1Q - Status of QA NCR's on QC certification.

J. Meisenheimer stated the NCR's were written as a result of programmatic paper work not being completely filled out. The inspectors had received all required training/examination and were considered certifiable by the QA Level III Engineer. To prevent reoccurrence, a daily certification matrix is available so that all leads can ascertain whether inspectors are certified prior to performing inspections. Additionally, an inspector cannot withdraw an open I.R. from the Q.A. Document Control unless his name appears on the certification list for that inspection report. (CLOSSES ITEM 45-7Q)

Item 47 - 2Q - Status of Q.C. Welding Inspections.

J. Meisenheimer responded to a question contained in Stone & Webster's Notes of Daily Meeting dated 8-8-83 (Item 47-4). A welding consultant has been retained by MPQAD to provide an assessment of welding inspections and quality instructions to the code requirements. The assessment was requested, in part, to address the need for more consistency in the inspections. In the past, reinspections have revealed occasional deficiencies after initial acceptance. Meisenheimer maintained, in any case, that the QC/QA personnel will not be restricted from rejecting an item anytime and issuing nonconformances on previously accepted items. (CLOSSES OUT ITEM 47-4)

Item 47 - 3Q - Information on NCR's.

B. Holsinger stated that NCR's are quoting sections of the parent document and explained that earlier remarks by Stone & Webster were aimed towards making a clear reference to the section(s) of the parent document that contain the requirement. (CLOSED ITEM)