



STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

| PRINCIPAL STAFF | | | |
|-----------------|--|------|-----------|
| RA | | ENF | |
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| A/RA | | PAO | |
| DPRP | | SLO | |
| DRMA | | RC | |
| DRMSP | | | |
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United States Nuclear Regulatory Commission
Midland Site Resident Inspection Office
Route 7
Midland, MI 48640

March 9, 1983

J.O. No. 14358
Ref. MPF 24

Attention Mr. R. Cook

RE: DOCKET NO. 50-323/330
MIDLAND PLANT - UNITS 1 and 2
INDEPENDENT ASSESSMENT OF AUXILIARY BUILDING UNDERPINNING
REPORT NO. 24

A copy of the Independent Assessment of the Auxiliary Building Underpinning Weekly Report No. 24 for the period February 27, 1983 through March 5, 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
A. Stanley Lucks
Project Manager

Enclosures

ASL/ka

MAR 14 1983

J.O. NO. 14358
Midland Plant
Units 1 and 2
Independent Assessment
Auxiliary Building Underpinning

Weekly Report No. 24

February 27, 1983 through March 5, 1983

Personnel on Site

Stone & Webster Michigan, Inc.

| | |
|-----------|------------|
| A. Lucks | 3/3 - 3/4 |
| W. Kilker | 2/28 - 3/5 |
| P. Barry | 2/28 - 3/5 |
| A. Scott | 3/2 - 3/5 |
| L. Rouen | 3/2 - 3/5 |

Parsons, Brinckerhoff Michigan, Inc.

| | |
|-----------|-----------|
| J. Ratner | 3/2 - 3/5 |
|-----------|-----------|

Meetings Attended

| <u>Date</u> | <u>Represented</u> | <u>Purpose</u> |
|------------------------|---|--|
| 2/28 through 3/4 | Stone & Webster Bechtel Consumers Power Parsons (3/3 - 3/4) | Daily Meetings |
| 3/2 | Stone & Webster Bechtel Consumers Power Weiss, Janney, Elstner | Discussion of coord- ination of Carlson meter installation activities |
| 3/3 | Stone & Webster NRC | Discussion of Scope of Assessment and Reports |
| 3/4 | Consumers Power Bechtel Stone & Webster | Weekly Soils Review |

Activities

Construction - Pier W12: The upper and lower level bearing assemblies and bearing plates were installed.

Pier W9: The 20 ft. long, 6 ft. x 8 ft. access drift was excavated and supported. The excavated material consisted of approximately a 1 ft. thickness of unreinforced concrete (encountered below the turbine building mat), 2 ft. of sand fill and 5 ft. of gray clay fill. No groundwater seepage entered the excavation. Six steel drift sets were installed and wood lagging was placed between the sets and across the end of the drift. Upon completion of the drift, the concrete mud-mat was placed in the floor of the drift and access pit.

Pier E12: No activity.

Pier E9: The construction activities on the access drift were similar to those performed in the pier W9 access drift. The excavated material consisted of 9-12 inches of unreinforced concrete underlain by 1 ft. of sand and 6 ft. of grayish brown clay. No groundwater seepage entered the excavation. The drift supports (steel sets and wood lagging) and concrete mud-mat were installed.

Quality Control, Documentation and Records

1. Witnessed the preparation of concrete trial mixes required to qualify a new mix design incorporating a "plasticizer" additive.
2. Verified the preparation of Quality Control Inspection Records and Quality Assurance Inspection Reports on the access pit for piers W9/11.
3. Reviewed a revised procedure on the installation of mechanical splices that clarifies the responsibility in the field for the final splice quality.
4. Witnessed the fabrication and inspection of pier E/W9 steel drift sets and pier W12 jackstands.

Observations

Construction - The excavation of the drifts and installation of the steel sets and wood lagging were done in accordance with the project documents. Soil was used to backpack the lagging as required.

In the east access drift to pier E9 excelsior was inserted into the space between most of the lagging boards. The Team feels that in the absence of groundwater seepage the use of excelsior is unnecessary. The use of excelsior makes the inspection of the backpacking more difficult and under these circumstances is not considered to be good practice. In the north-west corner of the drift the excavated clayey material was used to fill the space between the lagging boards. Clay should not be used to backpack between the boards. However, in this instance it should not create a problem due to the absence of groundwater.

Quality Control, Documentation and Records - The procedures for the preparation of the concrete trial mixes were in accordance with project documents and industry standards. The Quality Assurance and Control records observed were properly completed. The revision of the splicing procedure clarified the responsibility for the splice quality.

J.O. NO. 14358
Midland Plant
Units 1 and 2
Independent Assessment
Auxiliary Building Underpinning 3

The completion of piers E/W12 has been impacted to a large degree by delays associated with welding and the acceptance of the welded materials by the Quality organization. The welding associated delays that have prolonged the length of time between pier excavation and load transfer to the pier is contrary to good underpinning practice. In this regard, the Team is proposing to have welding specialists perform an on-site assessment of the shop and field welding together with the associated inspection activities.

Non-Conformance Identification Reports

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

| <u>NIR NO.</u> | <u>Description</u> | (Opened) <u>Date</u> (Closed) |
|----------------|-------------------------------|-------------------------------|
| 5 | Concrete Mix Qualification | 2/10/83 |

W E Keller
Project Engineer

A S. Smith
Project Manager

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: February 28, 1983

| Attendees: | <u>Bechtel</u> | <u>Stone/Webster</u> | <u>MPQAD</u> | <u>CPCo</u> |
|------------|----------------|----------------------|--------------|-------------|
| | J. Fisher | P. Barry | R. Sevo | G. Murray |
| | E. Cvikl | | | |
| | J. Gaydos | | | |

1. The "dress rehearsal" for the load transfer for pier W12 has been delayed to Wednesday March 1, 1983.
2. P. Barry inquired as to the documentation required by the RGE when authorizing or stopping work on piers adjacent to a pier being loaded. E. Cvikl said the "authorization" is set by drawings or sequencing schedules so no written RGE statement is required. On the other hand, if the RGE stops work it will be documented in his reports.
3. J. Fisher said the jacks will be manned at all times when the jacks are pressurized including during the acceptance periods.
4. J. Fisher stated that the access pit for pier W9 is completed waiting for approval to drift under the FIVP. The access pit for E9 is almost complete and should be completed today. Fabrication of drift sets is proceeding and some sets should be released today. The drift under the FIVP is delayed pending discussion with the NRC regarding the minor cracks opened in the FIVP during proof-jacking.
5. Bechtel will up-date the training procedure to reflect the new organization of personnel. This organization does not affect the Field Engineers who are in direct contact with the Subcontractor. The training record for the Field Engineers are available for review.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: March 1, 1983

| Attendees: | <u>Bechtel</u> | <u>Stone/Webster</u> | <u>MPQAD</u> | <u>CPCo</u> |
|------------|----------------|----------------------|--------------|-------------|
| | J. Fisher | P. Barry | ----- | G. Murray |
| | E. Cvikl | W. Kilker | | |
| | J. Gaydos | | | |

1. J. Gaydos gave the Team a copy of the proposed trial mix design. P. Barry will read and comment or question as necessary.
2. MCP 16.000 is being clarified with respect to reinforcement splicing process. MPQAD has commented on the changes.
3. G. Murray said E12 should not be loaded until after acceptance of the soil deformation criteria on W12. J. Fisher agreed.
4. E. Cvikl reported that in response to an earlier question by the Team, references to ASME requirements will be eliminated in MCP 70.000.
5. J. Fisher advised that NRC approval on E/W 9 resulted in work starting last night shift on drifting under the FIVPs.
6. J. Fisher stated that the FSO-1.000, Administrative Guideline, will be revised by March 3, 1983.
7. P. Barry questioned if MPQAD would interface with Bechtel procurement quality control (PQC) on inspection and acceptance of fabrication done off-site. The Team verified with R. Sevo that the PQC would be responsible for those off-site activities.
8. W. Kilker said he would review the past Team daily meeting notes to verify if there are any open items. If so, a list will be prepared and presented at a daily meeting.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: March 2, 1983

| | | | | |
|------------|----------------|-----------------------|--------------|-------------|
| Attendees: | <u>Bechtel</u> | <u>Stone/Webster</u> | <u>MPQAD</u> | <u>CPCo</u> |
| | E. Cvikl | P. Barry W. Kilker | R. Sevo | D. Puhalla |

1. E. Cvikl advised that "dress rehearsal" for load transfer at pier W12 is delayed until further notice by J. Fisher.
2. Trial mixes for concrete will be done today.
3. P. Barry asked about need for secondary telltale at piers E/W12. E. Cvikl replied that the secondary telltale was not required to be active until the mass excavation stage.
4. Discussion of what maybe a layer of non-structural concrete above membrane in pier W12 drift. E. Cvikl stated that the FIVP maybe core drilled to determine the extent on any non-structural concrete and if a "cold joint" exists that could cause a failure of any concrete into the drift.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: March 3, 1983

| | | | | |
|------------|----------------|----------------------|--------------|-------------|
| Attendees: | <u>Bechtel</u> | <u>Stone/Webster</u> | <u>MPQAD</u> | <u>CPCo</u> |
| | E. Cvikl | P. Barry | R. Sevo | G. Murray |
| | J. Gaydos | W. Kilker | | |
| | | L. Rouen | | |
| | | A. Scott | | |
| | | A. Lucks | | |
| | | <u>Parsons</u> | | |
| | | J. Ratner | | |

1. A general discussion was held of the merits of improving early concrete and grout strength to allow quicker access to the loading of the pier.
2. E. Cvikl presented a revised schedule on load transfer to pier W12.
3. E. Cvikl indicated the FIVP slab maybe core drilled to determine if a "cold joint" exists above the membrane level.
4. A discussion was held of the value of insuring the accuracy of placement of Carlson meters compared to the effect on the load read-out. A. Scott said tolerance levels being considered should be carefully evaluated.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: March 4, 1983

Attendees:

Bechtel

E. Cvikl
J. Gaydos
J. Fisher

Stone/Webster

W. Kilker
A. Lucks
L. Rouen

MPQAD

R. Sevo

CPCo

G. Murray
J. Schaub

Parsons

J. Ratner

1. J. Fisher advised that trial mixes for revised concrete mix are underway.
2. E. Cvikl said the NCR on pier W12 grout strength was being dispositioned. Strength on grout for this pier is adequate. Clarification will be made on the drawing.
3. L. Rouen stated he had seen the Revision of the procedure on reinforcing splicing and that his question had been resolved.
4. J. Fisher provided a new schedule for pier W12 load transfer. Sunday's work had been authorized to expedite the process.
5. W. Kilker brought-up a previous item discussed in the meetings of December 28/29, 1982. At that time, there was discussion of defining "construction aids" to distinguish certain items as not being part of the design. J. Fisher will up-date on decisions regarding this subject.
6. J. Fisher provided a copy of the revised FSO Training Program procedure.
7. E. Cvikl reported that he discussed with Project Engineering the tight tolerance on Carlson meter installations. Project Engineering said that the instrumentation Subcontractor feels it needs tight tolerance and the Field group feels it can be installed to those tolerances.