STONE & WEBSTER ENGINEERING CORPORATION

245 SUMMER STREET, BOSTON, MASSACHUSETTS

ADDRESS ALL CORRESPONDENCE TO P.O. BOX 2325, BOSTON, MASS. 02107

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

January 25, 1983

J.O. NO. 14358
Ref. MPF 18

Attention Mr. R. Cook

RE: DOCKET NO. 50-329/330
Midland Plant - UNITS 1 and 2
INDEPENDENT ASSESSMENT OF AUXILIARY BUILDING UNDERPINNING
REPORT NO. 18

A copy of the Independent Assessment of the Auxiliary Building Underpinning Weekly Report No. 18 for the period January 16, 1983 through January 22, 1983, is enclosed with this letter. Included, as an attachment, 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. S Lucks
ASL

A. Stanley Lucks
Project Manager

Enclosures

ASL/ka

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

Weekly Report No. 18

January 17, 1983 through January 22, 1983

Personnel on Site

Stone & Webster Engineering Corporation (SWEC)

W. Kilker	1/17 - 1/20
L. Rouen	1/19 - 1/22
P. Barry	1/17 - 1/22

Parsons, Brinckerhoff, Quade and Douglas (PBQD)

V. Madill	1/17 - 1/21

Meetings Attended

Date	Represented	Purpose
1/17 through 1/21	Stone & Webster Bechtel Consumers Power Parsons	Daily Meetings
1/21	Stone & Webster Bechtel Consumers Power	Weekly Soils Review

Activites

Construction - Pier W12 was excavated to the approximate final elevation of 564.6. At this elevation support channels were grouted and the mud-mat concrete placed. The excavation for the bell was not started. Wood lagging was used to temporarily support the side of the pit in the zone to be later excavated for the bell.

The material encountered during this weeks excavation in W12 was predominately natural (undisturbed) gray clay containing some small silt lenses. As excavation approached the final elevation, very few silt lenses were encounted and only small traces of silt were evident in the clay. The flow rate of perched groundwater into the excavation had reduced to approximately 10-15 gallons per day.

After entering the natural clay, the pier pit was alternately excavated approximately 42 inches and lagged. However, after breakback occurred the unlagged portion of the excavation was not allowed to exceed 18 inches. The void left by the breakback was formed and filled with grout. Probing for groundwater was performed as the pit was advanced. No groundwater was encountered (apart from the perched groundwater at El 586) and the probe hole was grouted as required by the construction procedures.

Excavation and lagging of pier E12 was begun this week and progressed to El 588. In addition fill concrete, the excavated material was a combination of sand and clay backfill, no perched groundwater was observed. The pier pit was alternately excavated approximately 18 inches and lagged. Backpacking of the lagging was done after installation of each spreader set (every 4th set). The backpacking material was an imported medium grained sand.

Quality Control, Documentation and Records-

1. Reviewed records of the performance demonstration that the Assessment Team witnessed the previous week.

2. Observed the RGE's verification of satisfactory conditions of pier W12 founding grade.

3. Observed the verification of the W12 founding grade elevation.

4. Reviewed qualification and certification records for the new excavation inspectors.

5. Observed QC inspection of bolting of spreader sets.

6. Observed batching of concrete for W12 mud-mat.

7. Observed testing of concrete for W12 mud-mat.

Observations

Construction - The Assessment Team determined that the construction practices employed to advance both the E12 and W12 pier excavations were in compliance with the project documents. In particular, the Assessment Team observed instances where work had progressed to an inspection point and was stopped until MPQAD was notified and an inspector was made available. The Assessment Team inspected the founding grade for pier W12 and did not note any unstable conditions. These observations agreed with the RGE's verification of satisfactory foundation conditions. It is the opinion of the Assessment Team, that the parties involved have exhibited great care in following procedures and performing the work in the best manner possible.

Quality Control, Documentation and Records - Training of MPQAD personnel continues in order to build-up sufficient numbers of knowledgeable inspectors. However, the need for inspectors has not resulted in "rubber stamping" certifications. This point is demonstrated by the fact that certification was denied one inspector who did not adequately document inspection documents to be used in his performance evaluation. This and other performance demonstrations were witnessed by the Assessment Team. The performance demonstrations were observed to be rigorous as to inspection details. The attention of supervisors to inspection hold points was clearly demonstrated on several occassions. Certification documentation reviewed was adequate and in accordance with procedures.

Non-Conformance Identification Reports

NIR #3 - Closed as a result of a CPCo safety Analysis Report change prepared for submission to the NRC. The change describes the commitments to control the production testing of the couplers.

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

NIR No.	Description	Date (Opened)	(Closed)
3	Coupler Testing Temperature	12/2/82	1/21/83
4	Welding Qualification Procedure	12/29/82	

L. T. Tauber
Project Engineer

A. S. Lacks STR
Project Manager

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: January 17, 1983

Attendees:	Bechtel	Stone/Webster	MPQAD	CPCo
	E. Cvikl R. Bradford	W. Kilker	R. Sevo	G. Murray

1. W. Kilker advised that Project Engineering had responded to NIR #3. W. Kilker requested G. Murray or E. Cvikl obtain for him a copy of the proposed SAR change notice on interpretation of the ASME III code with respect to the coupler testing.

2. R. Bradford reminded R. Sevo that QA must issue a new letter on the qualifications of the jack calibration agency. (MPQAD is in the process of auditing and certifying the manufacturer/calibrator.)

3. E. Cvikl advised that the Bechtel concrete specialist requested to be advised of the first pier concrete placement so as to be on-site.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: January 18, 1983

Attendees:	Bechtel	Stone/Webster	MPQAD	CPCo
	E. Cvikl J. Fisher	W. Kilker	-----	G. Murray

Parsons

V. Madill

1. E. Cvikl reported he had received a copy of the FSAR change notice on the code requirements for testing of the Fox-Howlett couplers. However, he needed a clarification prior to passing it on.

2. J. Fisher said that starting today, the subcontractor will not attempt to fill the space between lagging levels unless in the view of the Geotechnical Engineer a large enough void exists behind the lagging to initiate a backpacking operation.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: January 19, 1983

Attendees:	Bechtel	Stone/Webster	MPQAD	CPCo
	J. Fisher	W. Kilker	-----	-----
	E. Cvikl	Paul Barry		
	D. Lavelle			
	Parsons			
	V. Madill			

1. W. Kilker advised that NIR #3 on Testing Temperature of Couplers is being closed-out based on the SAR change notice. (The notice describes the intent to design the underpinning structure in accordance with ACI 349 not to ASME III - 2.)

2. J. Fisher advised that the audit of the jack calibration agency is complete and QC is witnessing the calibration.

3. J. Fisher issued the notes of a step-by-step procedure prepared by by Mergentime on excavating the pier bell.

4. The importance of maintaining a proper perspective with respect to backpacking was discussed. Attempting to backpack very narrow or spaces of limited spacial extent was not the intent of the procedure, nor is it considered necessary from the standpoint of a high quality installation. Backpacking will be used to prevent loss of ground and when in the opinion of the Geotechnical Engineer the trimming of the soil results in large void spaces.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: January 20, 1983

Attendees:	Bechtel	Stone/Webster	MPQAD	CPCo
	J. Fisher	W. Kilker	-----	G. Murray
	E. Cvikl	L. Rouen		
	J. Kelleher	P. Barry		
		Parsons		
		V. Madill		

1. J. Fisher reported that a zone of clay along the north side of pier W12 at approximately E1573 had spalled into the excavation last night. The zone was approximately 6 ft. long 2 ft. high and up to 1½ ft. deep. The subcontractor was authorized to grout the void to maintain stability and was performing that procedure this morning.

2. The option of placing concrete only in the bell of pier W12, maybe selected if in excavating and preparing the bell the clay material appears somewhat unstable. J. Fisher will insure that QC can support that option, if selected.

3. Discussion of the need for the sign-out of a work permit for the load transfer work on pier W12 with held.

INDEPENDENT ASSESSMENT TEAM MEETING WITH BECHTEL

Date: January 21, 1983

Attendees:	Bechtel	Stone/Webster	MPQAD	CPCo
	J. Fisher R. Bradford	P. Barry L. Rouse	------	G. Murray
		Parsons		
		V. Madill		

1. J. Fisher stated that the work schedule would remain 2-10 hr. shifts 6 days aweek during the excavation of the bell. Work over and above this scheduled will be performed as needed to stabilize the excavation if required.

2. R. Bradford stated that all material necessary to place concrete in the bell, if that option is used, is available now. Concrete can be ordered normally during the day, and arrangements have been made to have concrete delivered at night and on weekends if necessary with minimum of advanced notice.

3. The fabricators of the Fox-Howlett couplers in the fab shop are qualified splices. This will allow half of the coupler to be torqued at the fab shop.