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August 7, 1984

J.O.No. 14358  
 MPS-69

DOCKET NO. 50-329/330  
 MONTHLY THIRD PARTY ASSESSMENT MEETING  
MIDLAND NUCLEAR COGENERATION PLANT

The protocol governing communications for the Remedial Soils and Construction Completion Programs at the Midland Plant specifies a monthly meeting to discuss third party assessment activities and assigns preparation of the minutes of those meetings to Stone & Webster.

Enclosed are minutes of the meeting held on July 12, 1984.

*A.P. Amoruso*

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 Project Manager  
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 Underpinning and Remedial Soils

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MINUTES OF THE MEETING OF JULY 1984

STATUS OF INDEPENDENT ASSESSMENT  
OF UNDERPINNING AND REMEDIAL SOILS WORK

PURPOSE

The purpose of the public meeting was to report the status of the Stone & Webster Assessment.

SUMMARY

Mr. Lucks opened the meeting by stating that due to cancellation of the June monthly meeting, the meeting this month would cover weekly reports 85 through 93 which corresponds to the period April 29, 1984 through June 30, 1984. Mr. Lucks then discussed the Assessment Team current staffing level. Prior to suspension of construction on June 26, 1984, the Assessment Team had been covering underpinning operations on a seven days per week basis with a staff of four to five engineers on site. With the suspension of construction, the onsite staff has been decreased to two engineers to cover the monitoring and maintenance activities which have continued during the suspension of construction. The Assessment Team staffing will be maintained at this level pending resolution of construction financing for plant completion.

Mr. Lucks then stated that D. Benvie would summarize the construction status and Assessment Team activities for the last two months. Following Mr. Benvie's presentation, Mr. Lucks stated that W. Craig would provide an update on CP Co and the Contractor's activities in response to Assessment Team recommendations given in the report entitled "Evaluation of Change and Nonconformance Documents" issued in October of 1983.

Mr. Benvie began the summary with a description of the observations and activities performed by the Assessment Team. The major activities are listed below:

- o Underpinning Construction
- o Constructibility Review
- o QA and AC Performance
- o Work Activities

Observed activities for the Auxiliary Building Underpinning included extension of the access shafts, pier and drift excavation and lagging, soils stabilization grouting, pier reinforcing steel installation and concrete placement, transfer frame and grillage beam installations, and load transfers. It was noted that the Kc drifts were completed through to both UATs. Also, the piers completed in the past two months brings the total to 30 out of the required 57 piers.

The Assessment Team made the following observations:

- o In response to minor seepage encountered in the E5 pier bell, the Contractor exposed only small areas of the bell prior to installation of bell bracing. Seepage water was effectively diverted away from founding areas of the bell during placement of

the concrete mudmat through the use of perimeter and intermittent lateral trenches.

- o Soils stabilization grouting observed for the CT 3/10 drop pits indicates that this grouting method continues to be effective.
- o Lagging installation and backpacking for piers E/W5, CT 3/10 and Kc 5/9 was performed in accordance with the procedures.
- o An inspection by the Assessment Team of the reinforcing steel installed in piers CT 3/10 and E5 verified that number and location of reinforcing steel, spacing, clear cover, splice lengths, stirrup location, Fox Howlett coupler locations and absolute dimensions were in accordance with the design drawings.
- o For piers E/W5, E17, CT 3/10 and Kc8, concrete placement technique including lift height, lateral movement, free drop and concrete vibration were judged to be in accordance with good construction practice. The Contractor's activities associated with formation of an unplanned construction joint for pier Kc8 were in accordance with design requirements.
- o An overview of Contractor, Subcontractor and Resident Engineering activities associated with the complex load transfers for the E/W5 grillages and the CT 3/10 piers indicated that these load transfers were accomplished in accordance with procedural requirements and



the co-ordination effort exhibited by these organizations was good. It was noted that no detrimental building movement occurred during these loading operations.

The status of the underpinning activities for the SWPS was discussed next. Significant progress on the SWPS access shafts was made in the past two months. Installation of the upper level wales and excavation of the east access shaft was completed. Excavation of the west access shaft below the upper level wales was in progress at the time of suspension of construction. The quality of the extensive full penetration welds observed by the Assessment Team for the upper level wales was indicative of a high level of workmanship. Although some difficulty had been experienced with maintaining the backpacking in place, in part due to placement methodology and also because of erosion caused by surface water runoff associated with several heavy rainfalls, the Contractor has modified the method of placement and the type of backpacking used and has taken measures to protect the access shaft excavation during periods of inclement weather. As a result, the backpacking installation has improved significantly.

The Assessment Team observed placement of concrete for the BWST ring beam additions. With the exception of one instance, concrete was placed in accordance with good construction practice. Inadequate vibration of concrete occurred in a limited area of the BWST ring beam because of heavy reinforcing steel congestion, and as a result, MPQAD issued an NCR. Appropriate modifications were made for subsequent similar concrete placements.

A review of a recent Resident Engineering crack survey of the BWST foundations indicated the following:

- o No new enlarged cracks greater than 10 mils were found.
- o Crack patterns are unchanged.
- o No significant increase in crack widths have occurred since the last survey performed in 1982.

For the cathodic protection trenches, the method of Q backfill placement observed by the Assessment Team including loose lift thickness, number of passes, overlap of passes and type of equipment used was in accordance with procedural requirements.

The Assessment Team attended a constructibility review for the FIVP load transfer.

These reviews are held to:

- o Incorporate construction and engineering input into the final phases of the design.
- o Improve clarity of the design documents.
- o Provide for proper sequencing of construction activities.
- o Resolve questions and plan for contingencies.

The Assessment Team noted that participants involved in the review provided pertinent input and were knowledgeable of the subject matter.

Assessment Team activities associated with QA/QC were discussed. A description of those activities and Assessment Team observations are as follows:

- o MPQAD training sessions associated with the SWPS plate load test and excavation in Q soils areas were judged to be adequate in both content and presentation.
  
- o A training session to familiarize the SWPS subcontractor field engineers with quality requirements for jacking equipment, including quality procurement requirements, manufacturers' equipment documentation and jack calibration data was judged by the Assessment Team to be thorough.
  
- o A Quality Awareness session held during a craft "tool box" meeting to discuss predetermined hold points and quality criteria associated with bellling and excavation of piers was attended by the Assessment Team. It is the opinion of the Team that these tool box sessions serve as an effective means for stressing to the craftsmen the necessity of quality performance associated with their work.
  
- o An overview of QC inspection for instrumentation installation, placement of Q backfill, inspection and testing associated with

concrete placement and verification of anchor bolt tensioning indicate that the inspectors performing these activities were knowledgeable of the design requirements and performing associated inspection and testing in accordance with MPQAD inspection criteria.

Recent reviews by the Assessment Team of the Contractor's document control "self-audit" results showed that controlled document stations are being adequately maintained. Implementation of a computerized register for control of the Contractor and Subcontractor design documents and increased clerical staffing levels have aided the Contractor in upgrading their maintenance activities associated with controlled documents.

A report summarizing the FSO Quality Engineers (QE) review of the Auxiliary Building Subcontractor's material handling and storage was discussed. It was noted that the Assessment Team will continue to monitor corrective action to address the QE findings which included improper identification of material and storage areas, improper storage of materials and the use of personnel not trained to project procedures.

An overview of the offsite concrete batch plant activities including storage, segregation and identification of concrete aggregate and performance of aggregate moisture content calculations required for proportioning batch constituents indicated that these activities were performed satisfactorily.

Mr. Benvie then summarized the status of the Nonconformance Identification Reports that were active during the past two months.

- o NIR 22 which concerned discrepancies in posting attachments was closed on April 30, 1984. Upgrading of the controlled station was verified by MPQAD and subsequently by the Assessment Team.
- o NIR 25 which was written as a result of deficiencies associated with the use of the maximum load indicator needle on the US Testing concrete compression machine was closed on 5/9/84.
- o NIR 26 which detailed deviations from procedural requirements for concrete air entrainment and aggregate moisture testing was closed on 6/26/84. The appropriate personnel were reinstructed to the procedural requirements for these tests. Based on this, the Assessment Team closed out NIR 26.

The final Assessment Team activity was an overview of the following four Work Activity Packages:

- o WAP 46 - Permanent Dewatering System Installation in Yard Area.
- o WAP - Level D Wales, Excavate Y/Z 4A through 4D and 8, Soil Layback Kc3 to 4, Kc4 to 5, Kc8 to 9, Kc9 to 10.
- o WAP 85 - Tiebacks and Struts at Piers E/W 2 through E/W9.
- o WAP 86 - Support Brackets for Kc5.89, Kc6 and Kc7 - Turbine Building.

Mr. Benvie concluded his presentation with a slide showing a list of open items as of 6/30/84. The open items are:

- o 89-7 Level C Wale Bearing Plate Gap.
- o 89-31 Retirement of "One Time Deviation" FCRs.
- o 90-6 SWPS Duct Bank Cracks.
- o 91-7 Pier Kc5 Bearing Plates.
- o 92-14 MPQAD Monitoring of Material Handling and Storage.
- o 92-24 FCR Task Force Update.
- o 93-5 Concrete Placement for the BWST Ring Beam Addition Within the Valve Pits.

Mr. Benvie stated that all items opened prior to Week 89 have been closed. Significant past open items which were closed in the last two months include the US Testing upgrading activity and implementation of the computerized civil drawing register. The remaining open items have been opened within the past five weeks.

Mr. Craig began his presentation by stating that he would summarize CP Co and the Contractor's activities in response to Assessment Team recommendations associated with change and nonconformance documents and present the



Assessment Team evaluation of the responses. Those recommendations, status of implementation and Assessment Team evaluation are as follows:

- o Recommendation No. 1 - Implementation of a QAP Task Force to identify and define in a clear and concise manner, important quality attributes consistent with the intent of the specifications.

The Task Force reviewed specifications, drawings, and procedures for three construction areas; expansion anchor installation, steel fabrication/erection, and welding. The review identified procedural changes to enhance inspection and implementation of these construction processes. Also, the Task Force recommended that a philosophy of content be developed for preparation of inspection and construction procedures in new areas. The most significant recommendation was that engineering identify the quality attributes to match the significance of temporary construction items. All the recommendations were submitted to CP Co and were judged acceptable. The Assessment Team considers the response to be adequate.

- o Recommendation No. 2 - Expedite completion of design and maximize engineering support at the site.

The Auxiliary Building underpinning design effort is scheduled to be completed this month and the SWPS underpinning design would be completed by 9/84. It was noted that all calculations with the

exception of the Auxiliary Building Phase 4 design and the SWPS Phase 2 calculations have been delivered to the jobsite. These remaining calculations will be completed and delivered to the jobsite in a time frame suitable to the current schedule and construction activities.

Mr. Craig stated that efforts to maximize engineering support have included expanding the Resident Engineering staffing levels and authority. Also key design personnel have been assigned to the site enabling the Resident staff to answer the majority of NCRs and FCRs on site. Mr. Craig stated the Assessment Team considers the response to this recommendation adequate.

- o Recommendation No. 3 - Provide for timely processing of Interim FCRs.

Procedures were revised to eliminate the use of Interim FCRs and Resident Engineering was reorganized to provide a dedicated group for handling FCRs. Also, the FCR process was reviewed by a Task Force comprised of Field and Resident Engineering and recommendations which were made to enhance the process are being implemented. Mr. Craig stated the Assessment Team considers the Contractor's response to this recommendation adequate.

- o Recommendation No. 4 - Develop a method of trend analysis to relate the number of NCRs to the level of construction effort.

MPQAD has developed and implemented a trend analysis based on the level of inspection activity. Additionally, the Contractor had implemented a trend analysis relating NCRs to the level of construction activity. The response to this recommendation was considered adequate.

- o Recommendation No. 5 - Reduce the processing time for critical NCRs.

A reorganization of Resident Engineering and increased staffing levels have aided in reducing the process time for critical NCRs. Additionally need dates for NCRs are closely monitored to minimize impacting the construction schedule. This response was also considered adequate.

Mr. Craig then summarized his presentation as follows:

- o The Assessment Team considers the Contractor's response to all recommendations adequate.
- o Other quality activities have been generated out of the responses to these recommendations initiated by both Consumers Power and the Contractor.
- o Pier construction times have been reduced significantly as a result of the improved handling of change and nonconformance documents.

- o Ninety percent of all FCRs and NCRs are approved on the jobsite.
- o The reorganized Resident Engineering staff is more effective in processing change documents.
- o The revised procedures have streamlined the processing of change documents.

Mr. Craig concluded that as a result of the Contractor's response to the recommendations, no further action is required on the part of the Assessment Team.

In response to the three action items from the May public meeting, Mr. Mooney of CP Co stated that J. Meisenheimer would discuss the results of the MPQAD welding audit and the audit of the Instrumentation Subcontractor's activities. It was noted that the third action item, re-examination of cracks in the BWST ring beam additions, was covered in the Stone & Webster Assessment Team presentation.

Mr. Meisenheimer discussed the results of the MPQAD welding audit. A list of the audit findings follows:

<u>Item No.</u>	<u>Description</u>
O1F (FSO)	Uncontrolled filler material
O2F (FSO)	Field Welding Engineer not performing monthly equipment checks
O3F (BOP)	Field Welding Engineer not performing monthly equipment checks

<u>Item No.</u>	<u>Description</u>
04F (BOP)	Inconsistencies between original records and copies precludes their being termed duplicate records to meet record storage requirements
05F (BOP)	Changes made to records were not reviewed by ANI
06F (BOP)	Changes made to essential variables on records without qualifying welders
07F (BOP)	Qualification tests performed to wrong revision of the procedure
08F (BOP)	QA Manuals do not adequately address verification of personnel qualifications.
09F (BOP)	Inspection plans do not adequately verify recording of special process requirements.
01U (BOP)	Essential variable different on one original record and duplicate copy
02U (BOP)	Changes made to records without apparent justification for change

Mr. Meisenheimer noted that the first two findings were related to the underpinning work (FSO) while the remaining findings pertained to the Balance of Plant (BOP).

Mr. Meisenheimer stated that the items with the exception of 04F to 07F and 09F have been closed out. These items which involve changes to welding records and review of welding certifications are presently under review and are expected to be closed out during 8/84. Mr. Meisenheimer noted if an indeterminate situation exists upon completion of the review, nonconformance reports will be written.

Mr. Meisenheimer then reviewed the MPQAD audit results of the Instrumentation Subcontractor. The following is a list of the audit findings:

<u>Item No.</u>	<u>Description</u>
01F	WJE QA Manager not maintaining original records
02F	Equipment location not entered on forms
03F	Equipment calibration forms not being maintained
04F	Checker signatures missing from forms
05F	Multiple listing of equipment on the same record
06F	Reports not in accordance with format
07F	Controlled copy of WJE QA manual not available
08F	Data not recorded on proper forms
09F	NCRs not initiated for nonconforming items
10F	Procedures do not address all training requirements
01U	No document identifying QA records and retention times
02U	Equipment receipt inspection responsibility not clearly identified

Mr. Meisenheimer noted that items 06F, 07F, and 09F were the only findings that have not been closed. It is expected that these items will be closed during 7/84.

Mr. Meisenheimer summarized his presentation by stating that the results of the welding audit indicate that in the area of underpinning, the Subcontractor's welding activities are satisfactory. The results of the



Instrumentation Subcontractor audit indicate that implementation of procedural requirements is adequate. However, more diligence on the part of the Subcontractor is required in implementing their QA program.

#### QUESTIONS AND ANSWERS

The NRC asked several questions concerning items included in Weekly Reports 85-93.

1. The NRC asked how many people participated in the information gathering and preparation of the report on "Evaluation of Change and Nonconformance Documents." The evaluation and report was the combined effort of Mr. Craig and members of the Assessment Team assigned to Midland.
2. Did the scope to the change document evaluation cover more than Remedial Soils by crossing over into any Balance-of-Plant/Soils interface area? The effort was directed at soils work but Mr. Craig said was aware of the areas where interface activities required responses.
3. With reference to Item 85-4, the NRC requested an update on the use of onetime deviation FCRs. The Assessment Team stated that the use of onetime deviation FCRs is being minimized by direct incorporation of FCRs onto the drawings or reference by brief description.

4. Item 89-5 reported a discrepancy in readings between electrical and dial guage readouts for an extensometer at the SWPS. How was the discrepancy explained? Stone & Webster reported that moisture had entered the electrical guage causing the malfunction. CP Co stated the situation had been corrected.
  
5. With reference to Item 89-10, the NRC stated that if the access shaft soldier piles had been installed to Q standards, the condition involving two piles not driven to full depth might not have occurred.
  
6. With reference to Item 89-21, has a problem developed concerning the clarity of issued drawings? Stone & Webster stated that the comments referred to in Item 89-21 were on two specific drawings that were in the review cycle prior to release. The Contractor agreed with the Team's observation and had the drawings cleaned up. The Assessment Team does not see a generic problem in this area.
  
7. In Weekly Report 90, page 1, why is drypacking being allowed in the underpinning work? It was explained that drypacking is allowed on temporary piers but not on permanent piers.

8. With reference to Item 90-19, were NCRs issued on the two short piles in the access shaft? The reply was that no NCRs were issued because the installation was originally non-Q. The NRC stated that since the zone below el 609 is now designated Q, the piles should also be considered Q. CP Co will reply at the next meeting.
9. A clarification was requested on the continued use of conditional releases, as was the case described in Item 90-28. CP Co explained that conditional releases are not used frequently but there are instances where they can be appropriately applied.
10. With reference to Weekly Report 92, page 3, concerning Assessment Team observations of proper implementation of storage requirements, the NRC asked if Stone & Webster had identified the concern. The reply was that FSO had properly identified and reported the deficiencies. The Assessment Team reported that corrective action was underway.
11. Was Item 92-7 still open? The Assessment Team referred to Item 91-7 which relates to 92-7 and is still listed as an open item.
12. With respect to Item 93-7, the NRC asked for an Assessment Team opinion on the nature and cause of the cracks at the duct bank near the SWPS. The Assessment Team replied that CTL was preparing a report and the Team would review the report.

REQUIRED ACTION

No open action items are required for the Assessment Team from this meeting.

The following item remains open for CP Co:

1. Consideration will be given to the need for an NCR with respect to the two short access shaft soldier piles.

MINUTES OF THE MEETING ON JULY 12, 1984

STATUS OF CONSTRUCTION IMPLEMENTATION OVERVIEW (CIO) PROGRAM

PURPOSE

To discuss Third Party Overview activities of Stone & Webster Engineering Corporation (SWEC) and problems encountered regarding the Construction Completion Program (CCP) during May and June 1984.

SUMMARY

Mr. A. P. Amoruso, Project Manager for the CIO Program, opened the discussion with a summary of CIO activity during May and June 1984.

Mr. J. E. Karr reviewed the results of CIO assessments during May and June of the CCP, the Nuclear Steam Supply System (NSSS) Program, the Heating, Ventilating, and Air-Conditioning (HVAC) Program, and the Diesel Generator (DG) Program.

Site work in this period was limited, having suffered a slowdown and eventual stoppage due to the continuing financial difficulties faced by Consumers Power Company (CPCo).

Within the NSSS, the principal activity was hanger reinspection. CIO continued to monitor the work that was in progress. One CIO item relative to the ASME code was reported. This related to an inconsistency between the FSAR, the NSSS contract, and implementing specifications on the correct edition/addenda of the ASME Boiler & Pressure Vessel Code to be applied to NSSS pipe support installation work. One of the areas affected was the

required training and certification of inspection personnel for visual inspection of welds. The later (1974) edition of the ASME code required certification to the requirements of the American Society for Nondestructive Testing. Earlier versions of the ASME code did not require this. In this case, Babcock & Wilcox (B&W) halted inspection work and recertified the personnel. Where necessary, reinspection was performed, and the work is now proceeding satisfactorily. There were no additional CIO items or NIRs generated in May or June.

In the DG Program, reinstallation of the interconnecting piping began. It was subsequently halted. CIO monitored the work that was performed, and that work proceeded satisfactorily, with no items of concern or nonconformances noted.

In the HVAC Program, installation work continued at the beginning of this reporting period in the control room, while components were being fabricated in the onsite shop prior to installation in the control room. CIO monitored that work while it was in progress and additionally followed up on previous items relative to procedure revisions for welder qualification. Both areas were satisfactory with no additional CIO items of concern or nonconformances noted.

The principal work activity for CIO during this period was within the CCP. Status Assessment: Additionally, the Quality Verification Program and the Hanger Reinspection Program were reviewed and evaluated. CIO also reviewed the Phase 2 work that was accomplished. Evaluations of generic issues relative to document control, NRC commitments, and 10CFR50, Appendix B implementation continued; and we also concluded an update review and evaluation of PQCI's issued



to date. The majority of the CCP work was for the Phase 1 to Phase 2 transition of Module 120D. CIO reviewed and evaluated the preparatory work for the transition between Phase 1 and Phase 2 and began preparation for a similar evaluation on the next Module 120J (another part of the auxiliary building).

CCP activity during May and June also took place in the east pipeway, the auxiliary building, the control tower, the reactor building, the service water pumphouse, and the diesel generator building.

Within the reactor building, the fuel pool, which had not been active prior to this reporting period, became active for electrical, mechanical disciplines and the hanger reinspection program. At the beginning of June, work was completed in the lower portion of the Service Water Pumphouse, and this area was flooded in order to support the turbine roll.

In the area of status assessment, CIO Item No. 091 was identified. Procedurally, it is required to conduct an initial walkdown prior to beginning status assessment activities. We found no indication that the initial walkdown was conducted. No other areas of concern or items of nonconformance were identified.

Within the quality verification program, there were five CIO items and two Nonconformance Identification Reports (NIRs) generated during May and June. The first was Item No. 080. It dealt with the availability of personnel certified to those procedures which it appeared, at the time, would be needed in support of Phase 2 work in Module 120D. The final outcome of this item is that CIO had misunderstood the initial information provided and there was not, in fact, a problem. The people were available and were certified to conduct the required work.

Items 081 and 087 dealt with the inaccessible attribute program. Item 081 discussed some welds in the service water pump structure that had been coated with a bituminous type material and that were designated as inaccessible upon initial inspection. CIO requested an explanation of this since other similar welds had been cleaned and reinspected. The initial answer did not provide sufficient justification for classifying those welds inaccessible. CIO therefore closed Item 081 and issued Item 087 requesting a further response.

Item No. 083 also dealt with the inaccessible attribute program relative to cable, and requested clarification of intentions relative to declaring cable inaccessible.

Item 084 dealt with the results of an overinspection performed by CIO in Module 800 (Service Water Pumphouse), which identified a number of items relative to documentation which were not completed in accordance with the applicable procedures.

Of the two NIRs, one was discussed at the May meeting. This was identified in the early part of May and was available at that time. This has to do with the separation between electrical conduit and cable tray. At that time, the expected answer was that the installation had not been completed and covers would be installed on the cable tray so that the three-foot separation criteria between uncovered tray and conduit would not apply. This NIR has not been closed out as yet.

NIR 033 is related to CIO Items 081 and 087 and documents some specific discrepancies in Module 800 inspection results.

Within the hanger reinspection program, to date, there have been about 800 hangers reinspected. CIO has been following this activity with procedure reviews, documentation checks, and overinspection of the work performed. There was one CIO item and one NIR initiated against the hanger program during this period. These, considering the magnitude of work, are not particularly significant.

Item 090 identifies conflicts within the hanger reinspection procedures concerning information reporting and the specific reviews to be conducted for previous work.

NIR 037 documents a single instance of a hanger which does not conform with the latest design drawing.

In the area of generic issues, CIO continued to follow the long-term document control corrective action.

In one area of that corrective action, the consolidation of all document control functions into one single group operating throughout the job site has not progressed as originally scheduled. This is a result of the conditions on the project, where work has been slow, and the consolidation effort has not taken place as rapidly as originally anticipated. Other areas of the corrective action program are proceeding acceptably and essentially on schedule.

CIO concluded an evaluation of the implementation of 10CFR50, Appendix B, as reflected in CPCo's Quality Assurance Program. This evaluation reviewed

implementation at the program level of the 18 criteria as amplified in the NRC's Standard Review Plan. Of 226 attribute checks made, 223 were satisfactory, a very good evaluation. There were two minor CIO items that resulted directly from this review and one related item that are identified in CIO Items 082, 089, and 092.

Item 082 contains recommendations to the Jackson audit group relative to the coordination of their activities with the site.

Item 089 did not come directly out of this evaluation, but as part of our review, we looked at an audit of site procurement practices. We questioned whether procurement practices would be audited in Ann Arbor with the same scope as on the site.

Item 092 is again relatively minor. It identifies an inconsistency between documents which specify those regulatory and national codes and standards which are to be retained as plant records. One document indicates they will not be retained; another document indicates they will be retained until plant completion. In view of the project commitment to N45.2.9, CIO asked for a clarification of the intention regarding retention of these documents.

For Project Quality Control Instruction (PQCIs), we did an update review and also expanded the scope of the initial review which was conducted last year. In addition to looking at technical adequacy, we also reviewed the PQCIs against criteria derived from NUREG 0278; the criteria are for procedure usability, clarity, and effectiveness.

CIO Item 085 was generated as a result of this evaluation. It contains a substantial list of discrepancies, but given the full scope of the evaluation (some 70 procedures reviewed for 34 attributes each), the overall procedural base is in acceptable condition.

As previously indicated, the majority of CIO effort during this period related to the evaluation of Phase 1 activity and the readiness for Phase 2 activity in Module 120D, the Auxiliary Feedwater Pump Room. In Module 120D, CIO was able to evaluate the integrated results of the total Phase 1 effort.

In conducting this review, CIO began by attending the Executive Management Review Committee meeting during which various CCP participants presented to the management of CPCo and Bechtel Engineering (Bechtel) the results of their Phase 1 work. Taking the information presented in that meeting, CIO then conducted a 100 percent final inspection of the hardware in the module. A nonstatistical representative sample of that hardware's documentation was developed and reviewed.

CIO also reviewed readiness for Phase 2 by reviewing procedure and personnel availability and readiness to proceed with the program of construction work.

During the evaluation several secondary items which needed to be closed out, or at least evaluated for potential impact on Phase 2 work, were also reviewed. These related to training, to document control, to previous CIO open items, and previous NIRs.

As a result of this overall evaluation, CIO issued one item, Number 088, which documented generic concerns with the program implementation. Three NIRs were

also issued, one to document discrepancies with plant hardware, one to document discrepancies with the documentation created during Phase 1, and one to document areas where procedures had not been followed in implementing Phase 1 of the CCP.

In summary, there were three conclusions. The first conclusion was that Phase 1 had not been effectively implemented for 120D. The numbers and kinds of items that were identified by CIO indicated that there was insufficient program integration above the inspector/field engineer level to provide confidence that the full scope program had been effectively implemented and documented. The second conclusion was that in our evaluation of plant hardware, program implementation aside, the hardware was in good condition. There were some minor hardware items relative to configuration, cleanliness, and inplant storage of equipment, but as a whole, the plant hardware was, in fact, in good condition. The third conclusion was that upon completion of corrective action on the NIRs, CIO was satisfied that all open-work items had been effectively picked up in the "to-go" work list or the Construction Punch List, and there was no reason to restrain Phase 2 work. CPCo and the architect engineer could be permitted to proceed with the completion of the work. Shortly after that, a release was also obtained from the NRC to proceed with the Phase 2 work in the module.

Corrective action is either underway or completed for the generic concerns in CIO Item 088. During several meetings with CPCo, CIO has reviewed the changes being made, and believes it will ensure closer coordination between the various groups performing Phase 1 work. CIO is also preparing for a review of Module 120J, the next module to be completed that is similar to that for Module 120D.

As an update, the Status Assessment Program, overall, is about 19 percent complete; the Quality Verification Program is about 5 percent complete, giving overall CCP completion of around 10 percent.



During this period, a substantial number of CIO items and NIRs were closed. As of the last meeting, there were 21 open items, one "Hold" point, and 12 NCRs. During the month, CIO closed 13 items and 14 NIRs. At the end of June, this left 21 open items, 1 "Hold" point, and 5 NIRs.

Beginning three meetings ago, CIO started reporting on overall performance, and I would like to offer a few additional words about this topic this month. We have been referring to this as trend analysis of overall performance indicators for the total project. In fact, it is not trend analysis in the traditional manner of this industry. There are some things affecting what is being reported that are inherent in the CIO operation and that result from the project status that makes this really an indicator of how performance is going at a point in time rather than a trend.

Traditionally, trend analysis will pick an activity and follow it for a long period of time, and come up with some indication of whether quality is improving or getting worse, and will analyze results in order to arrive at a cause and, where necessary, corrective action.

The CIO operation is structured to encapsulate activities, to look at an activity, evaluate it, and then close it out. Long-term trends will not show up under these conditions. What is reflected by CIO information are specific problem areas that were identified in fairly confined disciplines, resolved, and then closed out.

The other thing that affects the information is the nature of the project. At this time, there is not a homogeneous flow of activity. Things are happening in little envelopes. Activity begins and stops, so there is no flow of work that

can indicate a trend in work performance. All that is indicated at this time and what is reported during the month of June, for example, is that in looking at the Phase 1 to Phase 2 transition for Module 120D, the results exceeded the satisfactory performance threshold of 5 percent.

However, if you also look at the other areas, such as system/area status assessment, training, pipe and component support welding, and welder qualification, there is a 0 percent reject rate, so the scope of the information available must be related to what is really happening on the project.

That concludes the formal CIO presentation.

Mr. Livermore, USNRC - Before you continue, let me ask you the same questions I asked during the soils presentation. Do you see any areas of improvement that might be instituted, such as coordination, cooperation, management. Do you see any potential problems?

Mr. Karr, SWEC - We have reviewed with CPCo, and also the NRC, areas where we believe a critical review of the CCP will not only enhance their chances for success in implementation but will also contribute to the efficiency of the program and improve the overall project chances for success. These areas are under evaluation by CPCo. CIO is receiving very good response from CPCo management. It is working very diligently right now to demonstrate that it has a firm grasp on problems identified in the past and is going to resolve them. If the work ongoing within CPCo at this time is pressed to its logical conclusion, it should eliminate potential future problems.

Mr. Amoruso, SWEC - Next, Mr. Robert Burns will summarize the last corporate audit of the CIO program.

Mr. Burns, SWEC - During the period April 30 to May 4, 1984, a second corporate QA audit of CIO activity took place. In this audit, we found one item of concern of the areas checked, which included all CCP related activity, procedural activities and personnel certifications. The area of concern was in personnel work assignments and related certification. There was one instance in Audit No. 1 of difficulties in this area, and in Audit No. 2, it turned up again. In the checklists that we verified, there were four instances where individuals, although qualified to perform activity, did not have appropriate

certifications. The corrective action taken was in multiple areas. First of all, the supervisors were reinstructed in work assignment requirements. The individuals within each group were instructed on acceptance of work assignments. Also, a cross-certification program was undertaken to provide more flexibility in personnel assignment. Subsequently, we reviewed and/or reinspected the work performed by the individuals in question, and there were no differences between the reinspection results and the original results. This matter has been responded to and closed. However, in subsequent follow-ups, corporate review of the activity will be continued to see that preventive action has been effective.

Mr. Livermore, USNRC - How many people were involved in this?

Mr. Burns, SWEC - Four in the second audit, and one in the first audit.

Mr. Livermore, USNRC - Was there a causal factor when this happened?

Mr. Burns, SWEC - We went over the material and interviewed some of the individuals involved. There were three contributors to the situation. First, the supervisors looked at the task at hand and the individual's qualifications as opposed to certification. Second, we were overly restrictive in classifying work areas, such as document control, training, and evaluation that could be cross-classified as either verification or evaluation. Third, some people had been in the process of being cross-certified, and we did not expedite the paperwork which was in the process of traveling through the system.

Mr. Amoruso, SWEC - I would like to close by making a statement on CIO manning. The work performed during this period was less than anticipated, and the CIO staff was reduced accordingly. It is now at 28. The number will increase or decrease as needed to support the ongoing work.

QUESTIONS AND ANSWERS

Mr. Hiland, USNRC - In CIO Report No. 47, Section 3, paragraph C, it states CPCo identified cracks in the wear rings on the auxiliary feedwater pumps and issued a 10CFR50.55(e) report on those cracks; did you evaluate that?

Mr. Harris, CPCo - There has been no 55(e) report issued as yet.

Mr. Quamme, CPCo - We will check on that and respond.

Mr. Hiland, USNRC - I understand you did write NCRs?

Mr. Quamme, CPCo - Yes.

Mr. Hiland, USNRC - In CIO Reports 48 and 49, SWEC identified a concern which prompted B&W to issue a stop work order due to weld inspectors not having an inspection qualification. We were under the impression that significant SWEC concerns would be formally documented in an item notification form. Was one issued for this specific finding?

Mr. Karr, SWEC - This was issued in a more generic statement. The item which was issued documented discrepancies in the ASME Code edition and addenda, which applied to the B&W work. This was the discrepancy between using the 1974 edition and using the 1970 edition through the summer of 1973 addenda. The reason why inspector qualification comes up is that up through the summer 1973 addenda of the Code, it did not require weld inspector certification to ASNT.



In the 1974 edition of the code, welding inspector certification to ASNT was included so this is a subset of the overall question of which edition and addenda of the ASME code applied to the B&W work.

Mr. Hiland, USNRC - I am familiar with the item you were addressing. However, since there a stop work order, we believe that some more formal documentation should be provided.

Mr. Karr, SWEC - Where a concern is documented within the utility, the architect engineers, or a subcontractor program, via NCR or stop work action, we are not going to replicate that documentation. You can find that discussed within our program plan. Since the subcontractor in this case took action under his own program, our intent is not to duplicate that work.

Mr. Burgess, USNRS - Our concern here is that the code case was brought up about two weeks prior to the stop work being issued, and another two weeks went by before the NRC was notified of the actual B&W stop work order. The question is why the time lag?

Mr. Quamme, CPCo - We recognized the deficiency in that area and the proper instructions have been given to the subcontractors. We have tightened that up and any stop work activity, regardless of where it originates, will be reported to the NRC.

Mr. Burgess, USNRS - What actions did B&W take to specifically close that?

Mr. Quamme, CPCo - B&W certified ITS inspectors to the code and reinspected the hardware where necessary.

Mr. Hiland, USNRC - I would like to have a package which documents the B&W stop work order and the accepted corrective action.

Mr. Quamme, CPCo - We will provide that.

Mr. Livermore, USNRC - We will carry this as an open item for the next meeting.

Mr. Hiland, USNRC - In CIO Reports 52 and 53, SWEC identified the fact that you were looking into an allegation by a former CPCo employee. There has been no subsequent follow-up in Reports 54 and 55. Can you provide the status of that investigation?

Mr. Karr, SWEC - We have completed the work as far as we can. The allegation deals with the application of a concrete bonding agent. This has also been picked up within CPCo's evaluation system. Bechtel has been requested by CPCo to provide an evaluation of the potential safety implication of use. At this point in time, it appears that the NCR which was part of the original allegation may have been closed out prematurely. However, it was also an existing item within the CPCo Audit Program, and an evaluation was being conducted under that program.

Mr. Hiland, USNRC - We would like you to continue to status that activity in your next reports, until we get a closure on it. We need some mechanism to follow these activities.

Mr. Karr, SWEC - We will do it.

Mr. Hiland, USNRC - CPCo, would you like to provide the status of your review?

Mr. Quamme, CPCo - We have a weldcrete program that is in process at this point in time. The completion of the program is scheduled for July 27, 1984, at which time we will be able to respond to the overall question of use of weldcrete onsite, both past and future. Bechtel is currently evaluating the whole problem. We reviewed their program. Bechtel covers all the important attributes of the question, and we are waiting for their completion.

Mr. Burgess, USNRC - Was the technical closure of that NCR based on the preliminary review?

Mr. Harris, CPCo - No, It was a CPCo Project Audit Division (PAD) closure of the NCR. The CPCo auditors initiated the original NCR. It was closed, perhaps prematurely. PAD has initiated a new NCR dealing with the technical aspects of the product, and that is what is going to be resolved by this CPCo report. We are still trying to clear the original NCR concern.

Mr. Livermore, USNRC - How long has this gone on?

Mr. Harris - It was originally identified in August of 1983 on Audit AFR831106F.

Mr. Burgess, USNRC - Is that correct, last August?

Mr. Karr, SWEC - Yes, the audit finding was identified back in August of 1983. The allegation was not made until June 5, 1984.

Mr. Livermore, USNRC - You have been working on this for a year?

Mr. Harris, CPCo - When the NCR was initiated, the weldcrete was tagged out. It was not used until the original NCR was closed.

Mr. Livermore, USNRC - The timeliness of corrective action is not very good. Are you going to close it out?

Mr. Quamme, CPCo - July 27, 1984, is the date we intend to have in our hands all the information necessary.

Mr. Hiland, USNRC - In CIO Report 55, we noted that based on a commitment from CPCo to provide procedures, CIO closed Item 085. In the past, those items have remained open pending completion activity on the part of CPCo. Would you explain how an item is closed or left open pending completion activities?

Mr. Karr, SWEC - In many ways, that is a subjective decision. If the closure action is one that is finite and measurable, then we will generally hold the item open until everything has been completed. Something like Item 085 can exist virtually forever. Some of the PQCI's are not even scheduled to be used for a year. We believed once we reviewed the input of the change information to the system and that was cataloged and scheduled for incorporation, CIO would not hold that particular item open.

Mr. Hiland, USNRC - You are satisfied that mechanisms are in place to ensure there was a change to procedures that would be implemented?

Mr. Karr, SWEC - We review each of the POCIs as they come up for use. We will have a backcheck on that.

Mr. Hiland, USNRC - Can CPCo provide us with an update of the corrective action on document control and what are the current plans for completion?

Mr. Quamme, CPCo - This the long-term correction action plan identified earlier in the year. Within a period of 4 to 5 weeks, all items identified on the long-term corrective action plan will be implemented. Final issue of the document control procedures that were a part of that long-term action plan will be within a week. They have all been either issued, or they are in the review cycle. The collapsing of all the stations and the operators of those stations under the document control organization is fairly complete. That will probably be completed by mid-August. That is an extra step which was not a part of our long-term corrective action plan. A decision has been made to pull those in also to give us consistency.

The Bechtel self-audit groups have been in place 2 1/2 months. That action item is complete. The overview group within MPQAD has been operating for a period of 2 to 3 months. In both instances, the number of discrepancies found by those audit groups has been on the decline, and currently, MPQAD reports less than 1 percent on any audit it is performing. So, we are within weeks of completing the entire long-term corrective action plan. The plan has been effective, and we are very satisfied with the results today.

Mr. Hiland, USNRC - The five document control stations each have a terminal today, and those terminals will be audited July 23, 1984 by MPQAD?

Mr. Quamme, CPCo - Yes, that will be a part of the overall audit.

Mr. Hiland, USNRC - Action Items 081 and 087. This has to do with the removal of the coal tar from the weld deemed to be inaccessible. We noted in your initial response that the MPQAD manager was the decision maker on that. What was the technical input to him to make that decision, that removal of coal tar would make the previous NDE that was performed invalid?

Mr. Harris, CPCo - The epoxy coal tar substance is very difficult to remove. The way to remove it would be to sandblast it off. That would result in peening of the welds so you could not come back and get a valid penetrant examination of the welds.

Mr. Hiland, USNRC - The response I read stated that if the epoxy was removed it would invalidate previous liquid penetrate examinations. I was looking for the technical answer as to why.

Mr. Harris, CPCo - As far as I know, that would not invalidate the previous ones; it would make the surface unacceptable for a valid new inspection.

Mr. Hiland, USNRC - CIO Action Item 83 has to do with the MPQAD Procedure N12, which requires documentation of inaccessible items. We have read the initial



response from CPCo to the SWEC item. We found that response unacceptable, even before SWEC comments on it, and I guess the first thing I would like to know; are you aware that a QAR was written on this subject several months ago?

Mr. Harris, CPCo - No, I am not.

Mr. Hiland, USNRC - I am aware it was. About 5 months ago, there was a QAR written on the same subject. I think it was voided; is that correct?

Mr. Karr, SWEC - I do not have that.

Mr. Hiland, USNRC - The situation is that the PQCI allows, via special Instruction No. 6, the quality control engineer to determine if an item is inaccessible, and so note it on his inspection report. When SWEC wrote this item, it asked for a response relative to Procedure N12. Your response says the PQCI was followed, and therefore, there is no problem. That was not the point. The N12 Procedure requires you to document inaccessible items. You answered that your PQCI was followed. Nobody disputed that. What we need to look at is whether the PQCI that is being used meets the Procedure N12.

Mr. Quamme, CPCo - We will look at that.

Mr. Hiland, CPCo - We think that is an open item, and we would like to hear a presentation at next month's meeting. I have a general note on the weekly reports from SWEC. We noted a reduction in the amount of detail in Section 3 of the reports, and we would like you to try to work on that and bring the detail in Section 3 back up to the level that it was about 6 months ago.

Mr. Karr, SWEC - I would make one comment on that. The amount of detail and specific information is directly related to the project activity. At this point in time, with the amount of ongoing work activity available, we are sometimes struggling to provide a lot of information.

Mr. Burgess, USNRS - We understand; it is just a comment.

Mr. Hiland, USNRC - Those are all the questions I have.

Mr. Livermore, USNRC - I would like to make some comments on Module 120D and the forthcoming 120J reinspection program. These are team comments, compliments of Mr. Harrison from the whole team. They are directed to CPCo. We are not happy with your implementation and results of the reinspection of Module 120D. The SWEC overview pointed out a number of weaknesses, mistakes, program, and procedure problems. Your corrective action, we believe, was not very timely, and we believe your program needs management help.

Now before anybody present goes running off the deep end here, I want to say in retrospect; we chalk up a great deal of these problems to first-run misques, ironing out the kinks of the new system. New teams were put together, etc; and we realize a certain amount of problems are to be expected. So, I can say in summation; therefore, the module 120J, the forthcoming one, our expectations of your actions or your implementations are going to be very high. It should be near 100 percent error-free. That should be a smooth running operation, and we would look to it as a management capability demonstration. We are expecting to gain confidence in your abilities.

Mr. Quamme, CPCo - CPCo and Bechtel are not 100 percent satisfied either. We recognize that we had a new program. I also have concluded that the program needs enhancement, which we have implemented, and we too fully expect that the result of 120J will be superior to that of 120D.

Mr. Livermore, USNRC - I would like to open the meeting to any questions from the public. If not, I thank you very much.

ACTION ITEMS:

1. CPCo is to provide the NRC with the package of information which documents the Stop Work Order issued by B&W for inspection of ASME III Welding.
2. CPCo is to report at the next meeting on the use of a POI (reported in CIO Item No. 083) as not fulfilling the requirements of Procedure No. N12 for inaccessible item identification and reporting.

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*Midland*

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

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

May 10, 1984

J.O. No. 14358  
Ref. MPF 85

Attention: Mr. Cook

DOCKET NO. 50-339/330  
MIDLAND PLANT UNITS 1 & 2  
INDEPENDENT ASSESSMENT OF UNDERPINNING  
REPORT NO. 85

A copy of the Independent Assessment of Underpinning Weekly Report No. 85 for the period of April 29, 1984 through May 4, 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.



A. Stanley Lucks  
Project Manager

Enclosures  
ASL/bd

- 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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Weekly Report No. 85

April 29, 1984 through May 4, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	4/29 - 5/1
D. Benvie	4/30 - 5/4
D. Zito	4/30 - 5/4
W. Kilker	5/3 - 5/5
L. Rouen	5/1 - 5/5

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	4/29 - 5/1
B. Metros	5/2 - 5/5

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
4/30 - 5/4	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting

Underpinning and Remedial Soils - Construction

Pier E5: Excavation of the bell area was initiated. One short side and half of one long side were completed. The belled sections are completely supported with steel plating. Minor water seepage continues to enter the bell area from above. Excavation and support of the containment drop pit was completed. The area between the pier and the containment drop pit was formed in preparation for the concrete working slab installation.

Pier E17: The center portion of the enlarged straight shaft pier was excavated and the mudmat installed.

Piers CT 3/10: The drop pit excavations and supports were completed to El. 594 ft.

Pier W5: Excavation and support of the bell area was completed. The drop pit excavation at the containment was also completed and the formwork placed for the concrete working slab between the pier and drop pit.

Pier W17: No further activity was performed pending fabrication of lagging materials to support an enlarged straight shafted pier.

Kc5 Drift: The finger drift to the pier was completed.

Access Shaft Level "C" Wales: Fit-up and welding of the wales continued in both shafts.

SWPS: Installation of the upper level wales and struts continued on the north and west sides. Excavation and lagging was completed to El. 626 along the east side and easternmost 20 ft of the north side.

Extension of the bentonite seal between the SWPS and the circulating water intake structure was completed. The base of the seal was extended to penetrate through the rip rap layer on the front side of these structures and prevent leakage at the joint between the structures.

BWSTs: Concrete was placed along the north section of the ring beam extension at Unit 1. Reinforcing steel and formwork installation continued at Unit 2.

Cathodic Protection: Trench excavation work continued.

#### Assessment Team Observations - Construction

During the past week, the construction effort for the auxiliary building underpinning concentrated on the excavation of five piers and drifting to two other piers. The Assessment Team observed the bell excavations for piers E/W5, concrete mudmat placement for piers E5 and E17, soils stabilization grouting for CT 3/10 and drifting to pier Kc5.

Minor water seepage was encountered during belling of the E5 pier. In order to preclude sloughing of the in-place soil, the Contractor was careful to expose only small areas of the bell prior to the installation of plate supports and bracing. Although soil conditions for pier W5 appeared stable, the Contractor elected to plate and brace the entire bell. The Assessment Team believes these measures undertaken to ensure the stability of the E/W5 bells were prudent. Placement of the grout mudmat for the E5 and E17 piers was in accordance with the procedures. Prior to grout placement, minor seepage in pier E5 was diverted from the founding soils. Duration of grout mixing was timed to ensure thorough mixing of the grout constituents as specified by the design. Grout placements was continuous, concluding the satisfactory installation of the mudmats for piers E5 and E17.

The results of the soil's stabilization grouting performed in piers CT 3/10 drop pits indicate that this installation was effective. The medium to fine grained sand observed on the excavated walls for these drop pits was cemented throughout, enabling the craftsmen to maintain a vertical excavation face, thus facilitating lagging installation.



The finger drift to pier Kc5 was observed by the Assessment Team. The Contractor maintained a close tolerance on the horizontal limits of the excavation. Lagging installation and backpacking associated with this drift conformed with the applicable procedures.

Installation of the upper lateral support system for the soldier pile wall along the east side of the SWPS was completed, allowing excavation of the access shaft to proceed. The Assessment Team observed excavation and lagging installations associated with lowering of the access shaft. The Contractor was careful to maintain the excavation well within the design limits, minimizing the amount of backpacking needed to ensure bearing between the lagging and in-situ soil. Placement of steel lagging was precise. The craftsmen carefully aligned the lagging during installation, ensuring lagging spacing requirements were met. The Contractor began using welded studs this week to expedite lagging installation. Clip angles which fasten the steel lagging to the soldier piles are attached to the lagging with the threaded studs instead of fillet welds. The clip angles are then secured to the soldier piles. The lagging surfaces receiving the welded studs were dry and clean. During installation of studs, the welding gun was held in place until the weld metal at the base of the stud had solidified. Welded stud bolts were then torqued to the appropriate tension, securing the clip angles into place.

Along the north side of the SWPS, installation of the soldier pile wall upper lateral support system continued. The Assessment Team observed full penetration welding of the horizontal shims for the upper level waler. The waler, soldier piles and shim plates were brushed to bare metal in preparation for the welds. The resulting quality of the full penetration welds, considering the size and extent of the effort involved with this type of weld, is indicative of a high level of craftsmanship.

Based on the observed quality of the on-going work, the Assessment Team concludes that construction of the SWPS access shaft is satisfactory.

Placement of concrete for the north section of the Unit 1 BWST ring beam addition was observed by the Assessment Team. During placement, the Contractor effectively used a concrete boom truck to deposit concrete at preplanned locations, thereby minimizing the need for lateral movement of the concrete. Concrete lift thicknesses and vibration of lifts was in accordance with the procedures. Proper curing of the surfaces completed the satisfactory placement of concrete for the north segment of the BWST Unit 1 ring beam addition.

#### Assessment Team Observation QA/QC

The Assessment Team closed NIR 22. This NIR concerned document control deficiencies identified at the Resident Engineers controlled document station for the remedial soils work. The document deficiencies noted in NIR 22 have been corrected by Resident Engineering. MPQAD and the Assessment Team independently verified correction of the deficiencies. Additionally, a sample audit by

MPQAD indicated that Resident Engineering is adequately maintaining their documents. As part of the long term corrective action, a system will be implemented whereby the Resident Engineers controlled documents will become reference documents. The Assessment Team will overview this change over from controlled documents to a reference system. A computerized register of design documents including change documents will serve as the means of control for the reference documents. The user will consult the listing and review the pertinent information in the reference files for a particular document as necessary to perform a given task. The Assessment Team believes that implementation of this system will provide the required assurance that the Resident Engineers are using the latest design document revisions.

The activities of US Testing for concrete placement at the BWST Unit 1 ring beam addition were observed during preplacement and in-process testing. All required concrete testing was performed in accordance with ASTM procedures.

The Assessment Team attended MPQAD training classes on the SWPS plate load test and on excavation of Q soils areas. Both of these classes were judged to be acceptable in content and presentation.

#### Work Activity Packages

No work activity packages were overviewed 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>	
		(Opened)	(Closed)
22	Resident Engineering Document Control	2/21/84	4/30/84
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 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 items 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	85-12
82-9	Trend Analysis Update	Open
84-12	Diesel Fuel Oil Lines	85-6
84-13	SWPS Phase II Cofferdam	85-7
84-20	Design Drawing Requirements for BWST Ring Beam Addition	Open
84-21	Repair of BWST Ring Beam Cracks	85-18

84-22	BWST Concrete Reinforcing Steel	85-19
84-23	BWST Corrosion Protection and Waterproofing	85-20
84-24	Repair of Concrete Surface Imperfections of the BWSTs	85-13
85-5	SWPS North Wall Concrete Surface	Open
85-29	Auxiliary Building Access Shaft Grout Shims	Open

WE Kilmer  
Project Engineer

ASL ES  
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 30, 1984

Present For:

Consumers Power  
G. Murray  
R. Wheeler  
R. Wieland

Stone & Webster  
D. Benvie  
D. Zito  
P. Majeski

Parsons-Brinckerhoff  
J. Oliviera  
Bechtel  
J. Fisher  
J. Kelleher  
E. Cvikl

MPAQD  
J. McMaster  
R. Sevo

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 85-1 - Auxiliary Building Underpinning Activities

Installation of the steel collar support frames was completed for piers CT 2/14 allowing drifting to piers CT 3/10 to commence.

Excavation of the drop pits at the reactor containment for installation of the E/W5 grillage support columns is in progress.

Excavation of piers E/W5 progressed to the top of the bell and installation of the ring beams was completed.

Excavation of the E17 pier has begun using the enlarged pier configuration.

Installation of reshore members to allow ringer drifting to piers KC 5/9 is in progress.

(INFORMATION ITEM)

Item 85-2 - SWPS Underpinning Activities

J. Fisher reported that excavation below the first level wales has begun along the east side of the SWPS. (INFORMATION ITEM)

Item 85-3 - Surface Voids in Grout

J. Kelleher provided the Assessment Team with copies of FCRs addressing repair of minor surface voids in the grout for leveling plates, anchor bolts and grouted-in bolts. (Item 82-3 remains OPEN) (INFORMATION ITEM)

Held at Midland Site  
Midland, Michigan  
April 30, 1984

New Items

Item 85-4 - One Time Deviation FCRs

P. Majeski asked how a document user determines if the work described in a one time deviation FCR, which has been incorporated onto a document by reference, is complete. J. Fisher responded that FCRs incorporated by reference contain a brief description of the FCR requirements. If the FCR is applicable to the document user's work, a copy of the FCR is available for the user to determine if the work has been completed. (CLOSED ITEM)

Item 85-5 - SWPS North Wall Concrete Surface

D. Zito discussed the existing concrete surface on the SWPS north wall. It was noted that a section of the wall approximately 3 ft long and 1.5 ft high located 26 ft from the SWPS northeast corner exhibited honeycombing. Also, several form tie holes were observed which have not been repaired. The Assessment Team asked what will be done to repair these conditions. J. Fisher will respond. (OPEN ITEM)

Response Items

Item 85-6 - Diesel Fuel Oil Lines

J. Fisher responded to the Assessment Team question concerning the plans for work on the diesel fuel oil lines. It is planned to excavate and expose the diesel fuel oil lines for inspection. All portions of the lines which are considered acceptable will be left in place. The remaining portions will be removed and replaced with new lines. (CLOSES ITEM 84-12)

Item 85-7 - SWPS Phase II Cofferdam

J. Fisher discussed design changes which will be implemented for the SWPS Phase II cofferdam. These changes are as follows:

- A. Wood lagging will be used for the soldier pile wall in those areas where the lagging span is 8 ft or less.
- B. Soldier piles will be installed full depth in sheeted pits. Previously, the design called for the use of drilling for installation of that portion of soldier pile excavations below the existing utilities.
- C. Based on available subsurface information, excavation for the Phase IIA portion of the cofferdam will not go below El. 610 ft. This will eliminate the lower bracing at El. 612.5 ft.



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

Held at Midland Site  
Midland, Michigan  
April 30, 1984

- D. The top 8 ft of excavation for the Phase IIB portion of the cofferdam will be sloped IH:IV. This will eliminate the lower bracing at El. 612.5' in portions of the Phase IIB cofferdam. (CLOSES ITEM 84-13)

Item 85-8 - NIR 22 - Resident Engineering Document Control

The Assessment Team has completed an overview of corrective action taken to address deficiencies with the Resident Engineers controlled documents noted in the NIR 22. Document deficiencies have been corrected by Resident Engineering. Additionally, a sample audit by MPQAD indicates that Resident Engineering is maintaining their documents adequately. Based on the sample audit results and a review by the Assessment Team that the noted document deficiencies were corrected, NIR 22 is closed. (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 1, 1984

Present For:

Consumers Power  
G. Murray

Stone & Webster  
D. Benvie  
D. Zito  
P. Majeski

Parsons-Brinckerhoff  
J. Oliviera

MPQAD  
J. McMaster  
R. Sevo

Bechtel  
J. Fisher  
J. Kelleher  
E. Cvikl

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 85-9 - Auxiliary Building Underpinning Activities

Excavation and soils stabilization grouting is in progress for the CT 3/10 drop pits.

Excavation for the E/W5 piers has proceeded into the pier bell area.

Item 85-10 - Trend Analysis

J. McMaster stated that MPQAD will give a presentation on 5-4-84 detailing their plans for modifying the NCR trend analysis program that is currently being used. (Item 64-10 remains OPEN) (INFORMATION ITEM)

Item 85-11 - SWPS Backpacking Material

J. Fisher discussed the backpacking material for the SWPS soldier pile wall. The contractor plans to mix cement with the present backpacking to aid in maintaining the backpacking in-place once it is installed. (Item 79-28 remains OPEN) (INFORMATION ITEM)

New Items

No new items were discussed.

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

Held at Midland Site  
Midland, Michigan  
May 1, 1984

Response Items

Item 85-12 - Surface Voids in Grout

The Assessment Team has reviewed FCRs issued to address repair of minor surface voids in grout for leveling plates, anchor bolts and grouted anchors. Based on a review of these FCRs, the Assessment Teams believes that requirements for repair of minor grout surface imperfections are adequately addressed. This item is closed. (CLOSES ITEM 82-3)

Item 85-13 - Repair of Concrete Surface Imperfections of the PWSTs

J. Fisher responded to the Assessment Team question concerning timely repair of surface imperfections for the BWST ring beam addition. Repair of surface imperfections for the BWST ring beam additions had been delayed due to the stop work order and because of scheduling changes. It is planned, as the work activity allows, to repair these surface imperfections before the affected area is covered up. (CLOSES ITEM 84-24)

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

Held at Midland Site  
Midland, Michigan  
May 2, 1984

Present For:

Consumers Power

G. Murray  
J. Schaub

Bechtel

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

MPQAD

J. McMaster  
R. Sevo

Stone & Webster

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 85-14 - Auxiliary Building Underpinning Activities

Excavation of the E5 pier to founding grade and placement of the concrete mudmat was completed.

Excavation of the E17 pier middle shaft was completed. Installation of reinforcing steel is expected to begin today.

Excavation of the drop pit for installation of the E5 grillage support columns at the reactor containment was completed.

Excavation of the finger drift to pier Kc5 has begun. (INFORMATION ITEM)

Item 85-15 - SWPS Underpinning Activities

J. Fisher stated that the FCR allowing the use of wood lagging in areas where the lagging span is less than 8ft will be issued today. Tubular steel lagging will still be used where the lagging span exceeds 8 ft. (INFORMATION ITEM)

New Items

Item 85-16 - BWST Concrete Placement

J. Fisher reported that concrete placement is scheduled today for the BWST Unit 1 ring beam addition. (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 2, 1984

Item 85-17 - Upper Leveling Plates

J. Kelleher provided the Assessment Team with a copy of the Field Engineers' report summarizing the results of the welding demonstration conducted on 4/20/84. This demonstration was performed to evaluate the extent of warping that would result with the use of a smaller weld for the upper leveling and bearing plate assembly. (INFORMATION ITEM) (Item 84-3 remains OPEN)

Item 85-18 - Repair of BWST Ring Beam Cracks

E. Cvikl responded to the Assessment Team question as to whether the cracks on the underside of the valve pit top slabs at the BWSTs are to be repaired. He stated that the cracks have been evaluated and it has been determined that these cracks do not require repair. (CLOSES ITEM 84-21)

Item 85-19 - BWST Concrete Reinforcing Steel

J. Fisher responded to the Assessment Team question concerning exposure of the Unit No. 1 BWST reinforcing steel to water and dirt. The low area on the west side of the Unit 1 BWST where this condition had been occurring has been cleaned up. Additionally, pumps have been reactivated in this low area to remove water that had collected. It was also noted that the discharge of water pumped thru the valve pit into this low area has been stopped. D. Zito stated that he has been observing the contractors efforts to clean up and dewater the noted area and is satisfied with the results of the cleanup. (CLOSES ITEM 84-22)

Item 85-20 - BWST Corrosion Protection and Waterproofing

E. Cvikl responded to the Assessment Team question concerning corrosion protection and waterproofing requirements for the BWSTs. He stated that there was not a concern with the channel sections contributing to corrosion of the reinforcing steel.

The channel sections which support the reinforcing cage do not come in contact with the insitu soil because they rest on a concrete mudmat. The presence of the mudmat prevents the insitu soil from corroding the channel sections and the reinforcing cage. In response to Assessment Team concerns associated with the damaged waterstop, E. Cvikl stated that a sealant will be applied to concrete once it is placed in the vicinity of the waterstop. This sealant will effectively serve the purpose that the waterstop was designed for. Based on this response the Assessment Team concludes that corrosion protection and waterproofing of the BWSTs is satisfactory. (CLOSES ITEM 84-23)

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

Held at Midland Site  
Midland, Michigan  
May 3, 1984

Present For:

Consumers Power  
G. Murray

Bechtel  
J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD  
J. McMaster  
R. Sevo

Stone & Webster  
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 85-21 - Auxiliary Building Underpinning Activities

Excavation of the W5 pier shaft and placement of the concrete mudmat was completed. Excavation of the E/W5 pier bells commenced.

Drop pit excavation at the reactor containment for the W5 grillage support columns was completed.

Excavation of the finger drift to pier Kc8 has started.

Installation of reinforcing steel is in progress for the E17 pier.

Pier CT 1 was rejackd for load verification. (INFORMATION ITEM)

Item 85-22 - SWPS Underpinning Activities

J. Fisher reported that revisions to the method of shimming the interface between the wales and the soldier piles is presently being reviewed. A revised design consisting of full penetration weld connections to a leveling plate spanning the interface between the wales and piles is being considered. (INFORMATION ITEM)

Item 85-23 - BWST Concrete

The first concrete placement for the Unit 1 BWST ring beam addition was completed. (INFORMATION ITEM)



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

Held at Midland Site  
Midland, Michigan  
May 3, 1984

Item 85-24 - Upper Leveling Plates

B. Metros reported that he had reviewed the Bechtel Field Engineers' report on the welding demonstration on plate warpage. Mr. Metros stated that end restraining the plates during cooldown and the use of a smaller continuous weld may not effectively reduce warpage. The use of several shorter welds may be effective in controlling warpage. (Item 79-26 remains OPEN) (OPINION ITEM)

New Items

Item 85-25 - Weekly Report #84

The text of Weekly Report #84 was reviewed. It was determined that all open items had been previously identified. It was clarified in the meeting that the portion of the report text describing over excavation at pier W17 which required grouting was a result of material sloughing and not workmanship. (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  
May 4, 1984

Present For:

Consumers Power  
None

Bechtel  
J. Fisher  
J. Kelleher  
E. Cvikl  
M. Blendy

MPQAD  
J. McMaster  
R. Sevo

Stone & Webster  
W. Kilker  
L. Rouen  
D. Benvie

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 85-26 - Auxiliary Building Underpinning Activities

Pier CT 12 was re-jacked for load verification.

Installation of bell bracing is in progress for pier W5.

The concrete mudmat at founding grade for the E17 middle pier was placed.  
(INFORMATION ITEM)

Item 85-27 - Trend Analysis

J. McMaster discussed MPQAD's plans regarding NCR trending. The present manual system for trend analysis of NCRs will remain in effect. To complement the present trending, an in-house tracking system which MPQAD has used on an informal basis for the past few months will be instituted as a monthly activity to identify development of NCR trends associated with all remedial soils activities. This tracking activity will evaluate the number of NCRs per number of inspection reports vs time for a specific construction activity (i.e., excavation, grouting, expansion anchors, welding associated with fabrication, welding associated with erection, etc.). The first monthly report presenting the results of the NCR tracking activity will be issued in mid-May. The Assessment Team will review the report when it is issued. (Item 64-10 remains OPEN)  
(INFORMATION ITEM)

Item 85-28 - SWPS Backpacking Method

B. Metros discussed backpacking in-process on the east side of the SWPS. He stated that additional effort is needed in tamping the backpacking to enhance its effectiveness. (Item 79-34 remains OPEN) (OPINION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 4, 1984

New Items

Item 85-29 - Auxiliary Building Access Shaft Grout Shims

D. Benvie discussed the use of grout shims at the interface of the wales and a few of the piers in the auxiliary building access shafts. It was noted that concern had previously been raised over the use of grout shims for the lateral support system at the SWPS. He asked if there was a concern with the use of similar grout shims for the access shaft lateral support system. J. Fisher will respond.  
(OPEN ITEM)

Item 85-30 - Pier W17 Alternate Design

J. Fisher reported that the alternate pier design used for pier E17 will be implemented for pier W17. Soil conditions dictated that the alternate design which consists of an enlarged straight shafted pier be used in place of a belled pier. (INFORMATION ITEM)

Response Items

No response items were addressed.



STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

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

May 17, 1984

J.O. No. 14358  
Ref. MPF 86

PRINCIPAL STAFF	
PA	✓
D/RA	
A/RA	
RC	
PAO	ESS
PGA	IL
ETE	File ✓

Attention: Mr. R. Cook

DOCKET NO. 50-339/330  
MIDLAND PLANT UNITS 1 & 2  
INDEPENDENT ASSESSMENT OF UNDERPINNING  
REPORT NO. 86

A copy of the Independent Assessment of Underpinning Weekly Report No. 86 for the period of May 6, 1984 through May 12, 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. Benvi for A. S. Lucks*

A. Stanley Lucks  
Project Manager

Enclosures  
ASL/pd

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

MAY 23 1984

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

Weekly Report No. 86  
May 6, 1984 through May 12, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	5/8 - 5/12
D. Benvie	5/7 - 5/12
D. Zito	5/7 - 5/11
W. Kilker	5/6 - 5/10
L. Rouen	5/6 - 5/8
A. Lucks	5/9 - 5/10
D. O'Nan	5/9 - 5/10
G. Palmer	5/9 - 5/10

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	5/9 - 5/12
B. Metros	5/6 - 5/8
J. Ratner	5/10 - 5/11

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
5/7 - 5/9 5/11	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting
5/7	Consumers Power Bechtel MPQAD Stone & Webster	Project Soils Meeting
5/7	Bechtel Consumers Power MPQAD Stone & Webster	Constructability Review Meeting
5/8	NRC Consumers Power MPQAD Stone & Webster	CCP/Soils Interface Meeting
5/10	NRC Consumers Power Stone & Webster	Monthly NRC Meeting

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

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
5/11	Consumers Power Bechtel MPQAD Stone & Webster	Weekly Interorganizational Meeting
5/11	Consumers Power Bechtel MPQAD Stone & Webster	Document Control Information Meeting

#### Underpinning and Remedial Soils - Construction

Pier E5: Concrete placement for the pier bell and the shear key between the pier and the containment drop pit was completed. Installation of the pier shaft reinforcing steel and the grillage support columns in the containment drop pit is in progress.

Pier Kc8: Excavation of the finger drift to the pier continued.

Pier E17: Placement of concrete for the middle portion of the enlarged shaft was completed.

Piers CT3/10: Pier excavations are in progress.

Pier W5: Concrete placement for the pier bell and the shear key between the pier and the containment drop pit was completed. Installation of the pier shaft reinforcing steel is nearing completion. Grillage support column installation in the containment drop pit continued.

Pier W17: No further activity was performed pending fabrication of lagging materials to support an enlarged straight shafted pier.

Pier Kc5: Excavation of the pier is in progress.

Access Shaft Level C Wales: Installation of the Level C Wales was completed.

SWPS: Installation of the upper level wales continued on the north and west sides. Excavation and lagging installation was completed to El. 623 ' along the east side of the excavation.

BWSTs: Reinforcing steel, formwork installation, and concrete placement continued.

Cathodic Protection: Trench excavation work continued.



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

Assessment Team Observations - Construction

Water seepage was effectively controlled in the E5 pier bell prior to placement of concrete for the working mat. The Contractor installed a perimeter trench around the bell periphery to intercept seepage along the side of the bell. Intermittent lateral trenches were excavated to divert any possible seepage away from the founding area of the bell. Subgrade soil which had been softened prior to excavation of the drainage trenches was removed in accordance with the procedures. The effectiveness of seepage control for the foundation of the E5 pier bell was judged to be satisfactory.

Concrete placement was observed at the E17 pier and the E/W5 bells. Key items noted included placement technique, consolidation and curing of concrete. Placement methodology and consolidation were judged to be satisfactory. The concrete was wet cured in accordance with the procedures.

The Assessment Team attended a constructability review for the FIVP load transfer. The purpose of the review was to discuss design requirements and finalize the logic and construction sequence associated with the FIVP load transfer. Items reviewed included intent and clarity of drawings, sequence of loading, procedure preparation requirements, proper sequencing of construction operations, interfacing between engineering, construction and quality organizations and allowances for contingencies. The Assessment Team believes that the constructability review was very thorough. The various organizations involved with the review were knowledgeable of the design and engineering requirements for the FIVP load transfer. Pertinent engineering and construction input was provided by all the organizations involved in the review. Additionally, the review was scheduled in a timely manner ensuring enough lead time for incorporation of applicable comments into the design drawings, and preparation of the required procedures and inspection plans prior to the scheduled construction dates.

The Assessment Team observed cadwelding of rebar and repair of 1.0 in. exploration holes at the BWST Unit 1 valve pit. The cadweld, packing and clamps were properly installed. The assembly was then preheated in accordance with the procedures. The crucible was installed and the filler metal was fired. The hardware was removed after initial solidification and the slag removed from the completed cadweld. The resulting quality of the completed cadweld was indicative of the satisfactory workmanship observed during the cadwelding process. Drypack was used to repair the 1.0 in. exploratory holes. The holes were presoaked in accordance with procedures. Drypack was mixed in small quantities appropriate for the size of this operation, ensuring that freshly mixed material was used at all placement locations. The drypack was rammed into the holes with a tamping rod and hammer, resulting in a well compacted and sound repair.

The Assessment Team inspected the condition of the backpacking completed to date for the SWPS east access shaft. In several locations the backpacking had fallen out from behind the lagging. This condition is attributable to the type of backpacking material and level of effort being implemented to install the backpacking. The situation is aggravated by vibration caused during flyash concrete removal around the soldier piles. The Assessment Team has previously expressed concern with this backpacking material and method of installation. The Assessment Team does not believe that the problems experienced to date have affected the overall stability of the excavation. However, the continuing problems associated with maintaining the backpacking in place indicates more diligence is required by the

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

Contractor to correct this situation before the excavation is significantly extended below the present levels. The Assessment Team has had further discussions with the Contractor concerning this situation. One modification being implemented involves the use of clay at the bottom of every second or third lagging board to prevent the sand backpacking from falling out. The Contractor is implementing the use of clay to upgrade the backpacking placed to date. It is planned to continue this backpacking method at least until excavation of the access shaft proceeds below the sand fill and into the clay fill. Once the excavation is in clay, it is anticipated the excavation can be maintained closer to design lines, thereby ensuring more contact between the lagging and in-situ soil. As an additional preventive measure, where necessary, the Contractor also plans to place excelsior in the spaces between the lagging. The Assessment Team will continue to monitor backpacking at the SWPS to ensure the stability of the in-situ soil support is maintained.

#### Assessment Team Observations QA/QC

The Assessment Team attended a quality awareness session held during a Subcontractor's toolbox meeting. At this meeting, the requirements for bellling and excavation of piers were discussed. During the discussion, the importance of predetermined hold points and quality criterion was reviewed. This session was judged to be adequate in providing the craftsmen with an awareness of quality requirements associated with the bellling and excavation of piers.

MPQAD calibration of vibrators and US Testing inspection and testing of concrete placed for the E17 pier was overviewed by the Assessment Team. Vibrators were inserted into fresh concrete and the required minimum frequency of vibration was verified. Preparation of concrete cylinders and air, slump and temperature testing conformed with ASTM procedures.

The Assessment Team attended a training session conducted by the SWPS underpinning subcontractor to familiarize their field engineers with quality requirements for jacking equipment. The discussion reviewed quality procurement requirements, manufacturers' equipment documentation, and calibration data needed prior to installation of the jacks. The content of the training session was judged to be thorough, detailing all the necessary documentation requirements to be met prior to jack installation.

#### Work Activity Packages

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

#### Nonconformance Identification Reports

<u>NIR No.</u>	<u>Description</u>	<u>Status</u> (Opened)(Closed)
25	Compressive Strength Testing of Concrete Cylinders	3/30/84 5/9/84

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

Open Items

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
81-24	BOP Construction Verification of Soils Work	Open
82-9	Trend Analysis	Open
84-20	Design Drawing Requirements for BWST Ring Beam Addition	86-6

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

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
85-5	SWPS North Wall Concrete	86-18
85-29	Auxiliary Building Access Shaft Grout Shims	Open
86-4	Auxiliary Building Crackmapping	Open
86-16	Vibration of BWST Concrete	Open

W.E. Fisher  
Project Engineer

W.E. Fisher for R.S. Smith  
Project Manager



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

Held at Midland Site  
Midland, Michigan  
May 7, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Kelleher E. Cvikl	J. McMaster R. Sevo	L. Rouen W. Kilker D. Benvie
			<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 86-1 - Auxiliary Building Underpinning Activities

Excavation of the pier CT 3/10 drop pits continued.

Bell excavation and bracing installation is in progress for piers E/W5.

Excavation of the finger drifts has begun for piers Kc 5/8.

Installation of the Level C Wales is nearing completion for both access shafts.

(INFORMATION ITEM)

Item 86-2 - SWPS Backpacking Material

J. Fisher reported that the use of cement with sand for backpacking the soldier pile wall will be discontinued. Use of the sand and cement mix produced a backpacking which was too stiff and prevented the contractors ability to subsequently check for voids in areas other than the spaces between lagging. Clay will be used instead of cement with the sand as a means to maintain the backpacking in place. (Item 79-28 remains OPEN) (INFORMATION ITEM)

Item 86-3 - BOP Construction Verification of Soils Work

J. Fisher reported that a meeting with the Assessment Team is scheduled today to discuss interfacing between FSO and the Balance of Plant (BOP) with respect to instances when BOP verification of underpinning activities will be required. (Item 81-21 remains OPEN) (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 7, 1984

New Items

Item 86-4 - Auxiliary Building Crackmapping

W. Kilker requested a copy of the MPQAD review of the required auxiliary building crackmapping associated with jacking of piers CT 1/12. J. McMaster will respond. (OPEN ITEM)

Item 86-5 - FIVP Crackmapping

E. Cvikel reported that FIVP crackmapping performed in April using the new grid system did not result in issuance of any NCRs. Previously, cracks in the FIVP were referenced to building column lines, resulting in differing interpretations as to the correct location of the cracks. (INFORMATION ITEM)

Response Items

Item 86-6 - Design Drawing Requirements for BWST Ring Beam Cracks

E. Cvikel provided the Assessment Team with a copy of the FCR addressing elevation inconsistencies in the top elevation of the valve pit, existing ring beam, and ring beam addition at the BWSTs. The FCR specifies that the top of the ring beam addition will be sloped as required to match the existing top elevation of the valve pit, while maintaining a minimum 2 in. of concrete cover over the reinforcing steel. The Assessment Team concludes that possible interface problems between the valve pit and ring beam addition due to elevation inconsistencies have been adequately addressed. (CLOSES ITEM 84-20)



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

Held at Midland Site  
Midland, Michigan  
May 8, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD

J. McMaster  
R. Sevo

Stone & Webster

L. Rouen  
W. Kilker  
D. Benvie

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 86-7 - Auxiliary Building Underpinning Activities

Excavation of the CT 10 pier shaft has begun.

Rebar installation is in progress for pier E17.

Bell excavation and placement of the grout mudmat was completed for pier W5.

(INFORMATION ITEM)

Item 86-8 - Auxiliary Building Crackmapping

E. Cvikl reported the submittal of the auxiliary building crackmapping results performed after jacking of the CT 1/12 piers is scheduled for 5/11/84. J. McMaster stated the MPQAD should complete their review of the crackmapping results approximately 2 weeks after submittal. (Item 86-4 remains OPEN) (INFORMATION ITEM)

New Items

Item 86-9 - BWST Ring Beam Addition

J. Fisher reported that concrete will be placed today for the west segment of the Unit 2 ring beam addition. (INFORMATION ITEM)

Item 86-10 - Rejacking of the W8 Grillage

E. Cvikl reported that the W8 grillage will be rejaacked today. The W8 grillage is being rejaacked in response to a change of 20% in the grillage posts strain gage readings and an increase in the rate of building settlement

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

Held at Midland Site  
Midland, Michigan  
May 8, 1984

(7 mils/48 hrs) in the vicinity of the W8 grillage. (INFORMATION ITEM)

Item 86-11 - Weldcrete

W. Kilker asked if the contractor planned to resume the use of Weldcrete since the NCR addressing concerns with the vendors QA program had been resolved. J. Kelleher responded that it is planned to use Weldcrete for applications related to temporary underpinning activities. Engineering is presently evaluating the use of Weldcrete for the permanent underpinning. (CLOSED ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 9, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	P. Goguen	J. McMaster	W. Kilker
J. Schaub	J. Fisher	R. Sevo	D. Benvie
	J. Kelleher		D. Zito
	E. Cvikl		P. Majeski
	B. Brandes		
	N. Swanberg		
			<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 86-12 - Auxiliary Building Underpinning Activities

Shaft excavation for pier CT 10 has proceeded to the concrete mudmat at el. 583. No perched groundwater has been encountered to date.

Excavation of the CT 3 pier shaft has started.

Bell excavation was completed for the E5 pier.

Concrete placement for the shear key between the containment drop pit and the W5 pier was completed.

Excavation of the Kc5 pier shaft has begun.

(INFORMATION ITEM)

Item 86-13 - U.S. Testing Corrective Action

J. Kelleher provided a status on the U.S. Testing upgrading process. All Quality Control Procedures (QCPs) with attached work instructions have been submitted and approved. Issuance of the QCPs is in progress. Qualification of U.S. Testing Technicians to Level I for 20 or more certifications is continuing. Five technicians remain to be cross trained to at least 20 certifications.

(INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 9, 1984

New Items

Item 86-14 - MPQAD Receipt Inspection of the E/W5 Grillages

P. Majeski asked if MPQAD receipt inspection of the E/W5 grillages was completed and if so were any NCRs issued. J. Kelleher stated that MPQAD receipt inspection had been completed. Procedural nonconformances were noted during the inspection, resulting in issuance of an NCR. No hardware deficiencies were found during the receipt inspection. (CLOSED ITEM)

Item 86-15 - Lessons Learned

J. Schaub asked if there were lessons learned from the Level C wale installations that can be applied to the remaining wale installations in the access shafts. J. Fisher responded that changes will be made to design documents to incorporate lessons learned from the Level C wale installation. (CLOSED ITEM)

Item 86-16 - Vibration of BWST Concrete

D. Zito noted that an NCR had been issued due to insufficient vibration of the concrete placed yesterday for the BWST Unit 2 ring beam addition. It was noted that heavy rebar congestion prevented the contractor from adequately vibrating the concrete. Mr. Zito asked what provisions will be taken to address this problem for the remaining BWST concrete placements where there is a high concentration of rebar. P. Goguen stated that modifications being evaluated to address this problem in the future include :

- A. Bundling of rebar to allow passage of vibrators into these heavily congested areas.
- B. Using form vibrators to provide additional consolidation of the concrete.
- C. Placing starter grout in areas where rebar congestion is extensive to ensure full penetration of concrete.

The Assessment Team will overview upcoming concrete placements at the BWST. Implementation of the proposed modifications will be evaluated for effectiveness. (OPEN ITEM)

Response Items

Item 86-17 - NIR 25 - Compressive Strength Testing of Concrete Cylinders

The Assessment Team has reviewed the QAR response to NIR 25 detailing deficiencies associated with the use of the maximum load indicator dial on the U.S. Testing concrete compression machine. The QAR states that the use of the needle is not required by ASTM procedures. Although the concrete compression machine at the U.S. Testing Laboratory is equipped with the needle, the technicians do not use it because it affects the reading of the primary load measuring

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Held at Midland Site  
Midland, Michigan  
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arm. It should be noted that the concrete compression machine has been calibrated with and without the maximum load indicator dial. Additionally, shock associated with concrete failure during testing can effect the maximum load indicator reading. Therefore, the US Testing Technicians only read the load measuring arm. The Assessment Team contacted various QA organizations involved with the nuclear industry and found that although the maximum load indicator is used during testing, the primary load measuring arm value is used to document maximum load. The Assessment Team concludes therefore that the procedure being implemented is adequate. NIR 25 is CLOSED . (INFORMATION ITEM)

Item 86-18 - SWPS North Wall Concrete Surface.

J. Fisher responded to the Assessment Team question concerning repair of honeycombing and form tie holes for the SWPS north wall. All areas of the north wall where surface imperfections such as honeycombing or form tie holes exist will be repaired in accordance with design requirements. The repair work will be completed prior to placement of concrete for the missile shield protection on the SWPS north wall. (CLOSES ITEM 85-5)



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

Held at Midland Site  
Midland, Michigan  
May 10, 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  
May 11, 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		D. Zito
	E. Cvikl		P. Majeski
			<u>Parsons Brinckerhoff</u>
			J. Oliveira
			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

Status Items

Item 86-19 - Auxiliary Building Underpinning Activities

Concrete placement was completed for the W5 pier bell.

The first lift of concrete was placed for the middle portion of the E17 pier shaft.

Level C wale installation has been completed in the east access shaft.  
(INFORMATION ITEM)

Item 86-20 - SWPS Underpinning Activities

J. Fisher reported that an FCR allowing the use of wood lagging in areas where the lagging span is less than 8 ft. was issued. Tubular steel lagging will still be used where the lagging span exceeds 8 ft. (INFORMATION ITEM)

New Items

Item 86-21 - BWST Crack Review

E. Cvikl reported that Resident Engineering has reinspected the existing BWST ring beams to determine if additional cracking had occurred in areas where concrete placement is scheduled in the near term, subsequent to repair of the original cracks. No additional cracks were found. (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 86-22 - Independent Assessment - 270 Day Report

P. Majeski stated that the 270 Day Report summarizing the Assessment Team observations of the underpinning work performed since the 90 Day Report had been recently issued. He noted that the Assessment Team will address follow-up of the conclusions and recommendations contained in the report in the near future. (INFORMATION ITEM)

Item 86-23 - NCR Trending by FSO

P. Majeski requested an update on NCR Trending being performed by FSO. J. Fisher stated that FSO has recently revised their in-house trending method to include tracking of NCR trends for very specific work activities. FSO trending tracks the number of nonconformances for a given level of work effort. The level of work effort is expressed as a quantity (e.g., number of expansion anchors, cubic yards of concrete, etc.) which has been selected to best represent the work effort for a specific activity. (INFORMATION ITEM)

Item 86-24 - Weekly Report #85

The text of Weekly Report #85 was reviewed. It was determined that all open items had been previously identified. (INFORMATION ITEM)

Response Items

No response items were addressed.



STONE & WEBSTER MICHIGAN, INC. ✓

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

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

May 22, 1984

J. O. No. 14358  
Ref. MPF 87

Attention: Mr. R. Cook

DOCKET NO. 50-339/330  
MIDLAND PLANT UNITS 1 & 2  
INDEPENDENT ASSESSMENT OF UNDERPINNING  
REPORT NO. 87

A copy of the Independent Assessment of Underpinning Weekly Report No. 87 for the period of May 13, 1984 through May 19, 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.

*W.E. Lucks for AS Lucks*

A. Stanley Lucks  
Project Manager

Enclosures  
ASL/pd

MAY 27 1984

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

Weekly Report No. 87  
May 13, 1984 through May 19, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	5/13 - 5/15
D. Benvie	5/14 - 5/18
D. Zito	5/14 - 5/18
W. Kilker	5/17 - 5/19
L. Rouen	5/15 - 5/19

Parsons Brinckerhoff Michigan, Inc.

J. Oliveria	5/13 - 5/15
B. Metros	5/16 - 5/19

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
5/14 - 5/16 5/18	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting
5/18	Consumers Power Bechtel MPQAD Stone & Webster	Weekly Interorganizational Meeting
5/18	Consumers Power Bechtel MPQAD Stone & Webster	Document Control Information Meeting

Underpinning and Remedial Soils - Construction

Pier E/W5: Concrete placement for each pier shaft and grillage support column installations were completed. Installation of the shim plates for the bearing assemblies is in progress.

Pier Kc8: Excavation for the pier has progressed approximately 8 ft.

Pier E17: Installation of the jacks and jackstands for the middle portion of the enlarged shaft is in progress.

Pier CT 3/10: The pier shafts have been excavated to founding subgrade.

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Midland Plant  
Units 1 & 2  
Independent Assessment of Underpinning

Pier Kc5: Excavation of the pier shaft and installation of the pier shaft mudmat was completed. Bell excavation is nearly complete.

Pier W17: No further activity was performed pending fabrication of lagging materials to support the enlarged shaft.

SWPS: Installation of the upper level wales continued on the north and west sides. Excavation and lagging installation was completed to El. 620' along the east side of the excavation.

BWSTs: Reinforcing steel formwork installation and concrete placement continued.

Cathodic Protection: Trench excavation and backfilling work continued.

#### Assessment Team Observations - Construction

The Assessment Team performed an independent inspection of the reinforcing steel installed in pier E5. Attributes verified during the inspection included number and location of reinforcing steel, spacing, clear cover, splice lengths, stirrup locations, hairpin ties, Fox Howlett coupler locations and absolute dimensions. All attributes were determined to be in accordance with design requirements. Fox Howlett coupler installation at W5 was overviewed by the Assessment Team. The reinforcing steel which had previously been threaded for the Fox Howlett couplers was properly stored at the work area to protect the threads from damage. Installation of these couplers conformed with applicable procedures. The craftsmen applied the necessary torque to the couplers as required to secure the reinforcing steel. After proper embedment of the Fox Howlett couplers was verified, the completed coupler was marked by QC indicating an acceptable installation.

Backpacking for pier CT 3 and the subsequent field and resident engineering inspection was overviewed by the Assessment Team. Backpacking was installed and firmly tamped into place ensuring adequate contact between the lagging and in-situ soil. The inspection performed by resident and field engineering was thorough. This engineering inspection found one set of lagging placed on the previous shift where backpacking had either fallen out or was not placed. This situation was immediately corrected.

The Assessment Team observed the entire concrete placement for the E5 pier shaft and placement of the last lift for the W5 pier shaft. Placement technique including lift height, lateral movement, free drop, and concrete vibration was in accordance with good construction practice. Field engineering and supervision supporting the placement activities was judged to be acceptable. The nonmanual personnel associated with the placement activities were knowledgeable of correct placement techniques to ensure conformance with design requirements.

The Assessment Team attended a daily direct hire meeting. Planned activities and the required engineering, quality inspection and construction support were discussed. The Assessment Team believes that these meetings are a useful



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 Units 1 & 2  
 Independent Assessment of Underpinning

tool to aid in manpower planning for support of the direct hire work on a day-to-day basis.

#### Assessment Team Observations - QA/QC

The Assessment Team overviewed MPQAD inspection of the upper Carlson Meter installations at pier E5. The inspector verified that dimensional requirements including spacing, plumb and level conformed with the design.

MPQAD inspection of Q backfill for the cathodic protection installation was satisfactory. The inspector verified that loose lift thickness, number of passes, required overlap of passes and compaction equipment conformed with the required placement technology.

MPQAD inspection of concrete placed for the E5 pier was observed by the Assessment Team. Qualifications of the MPQAD inspector to the appropriate certifications was determined to be acceptable. The inspector verified that the US Testing personnel performing slump testing air entrainment, and preparing concrete cylinders did so in accordance with ASTM procedures.

The Assessment Team attended a quality session held to review quality requirements associated with expansion anchor installation. The instructor emphasized the need for prerequisite documentation to be in place at the appropriate work areas and explained the purpose of the QC holdpoints. The Assessment Team believes that this session adequately provided the craftspeople with an awareness for the need to maintain high quality standards in performing their work.

#### Work Activity Packages

<u>WAP No.</u>	<u>Title</u>	<u>Status</u>
86	Support Brackets for Kc 5.89, Kc 6 and Kc7 Turbine Building	(Opened) (Closed) 5/18/84

#### Nonconformance Identification Reports

No nonconformance reports were opened or active during the past week.

#### Open Items

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 item stops.



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 Midland Plant  
 Units 1 & 2  
 Independent Assessment of Underpinning

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	87-35
79-28	SWPS Backpacking Material	Open
79-34	SWPS Backpacking Placement	Open
81-21	BOP Construction Verification of Soils Work	Open
82-9	Trend Analysis	Open
85-29	Auxiliary Building Access Shaft Grout Shims	87-19
86-4	Auxiliary Building Crackmapping	Open
87-5	Implementation of the QAP Task Force Recommendations	Open
87-10	Reverification of Previously Mapped Cracks at the BWSTs.	Open
87-15	Excavation Conveyors at the SWPS	Open
87-24	Control Tower Instrumentation Reading	Open

*W E Fisher*  
 Project Engineer

*W E Fisher AS Suleis*  
 Project Manager

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

Held at Midland Site  
Midland, Michigan  
May 14, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Kelleher E. Cvikl	R. Sevo	D. Benvie D. Zito P. Majeski
			<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 87-1 - Auxiliary Building Underpinning Activities.

Removal of drift sets and soil between piers E/W10 and 11 was completed.

Excavation of the Kc8 pier shaft has begun.

Installation of pier E5 shaft rebar is in progress.

Placement of concrete for the middle portion of the E17 enlarged pier was completed.

Excavation of the CT 3/10 pier shafts continued.

Installation of the W5 pier shaft rebar is nearing completion.

Excavation of the Kc5 pier shaft is in progress.

Level C Wale installation was completed for the west access shaft.

(INFORMATION ITEM)

Item 87-2 - BWST Ring Beam Additions.

J. Fisher reported that concrete for a portion of the ring beam addition at both BWSTs will be placed today. (INFORMATION ITEM)

Item 87-3 - SWPS Backpacking Method.

P. Majeski stated that the Assessment Team had looked at the backpacking at the SWPS this past weekend. The quality of the installed backpacking has improved but there is one area that still requires upgrading. Mr. Majeski suggested that a uniform method of backpacking might be more helpful

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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
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in assuring that the backpacking is performed consistently in an adequate manner. (Item 79-34 remains OPEN) (OPINION ITEM)

Item 87-4 - Upper Leveling Plates.

Mr. Benvie asked if the FCR revising welding requirements for the upper leveling and bearing plate assemblies will be issued prior to installation of this assembly at the E17 pier. J. Kelleher responded that the forecasted issuance date for the FCR will allow use of the revised welding requirements for the E17 pier. (Item 79-26 remains OPEN) (INFORMATION ITEM)

New Items

Item 87-5 - SWEC Report - "Evaluation of Change and Nonconformance Documents."

P. Majeski stated that followup of the recommendations contained in the SWEC report entitled "Evaluation of Change and Nonconformance Documents" will be reviewed by the Assessment Team in the near future. The recommendations contained in the reports are associated with NCR trending, NCR and FCR process times, development of a QAP task force and availability of engineering support on site. (INFORMATION ITEM)

Item 87-6 - Implementation of the QAP Task Force Recommendations.

P. Majeski requested the status of C P Co implementation of the QAP Task Force recommendations. These recommendations include revisions to selected PQCI's, construction procedures, and specifications to facilitate construction and inspection of various processes. Also, guidelines for developing future PQCI's, construction procedures and specifications associated with new construction areas are included in the task force recommendations. G. Murray will respond. (OPEN ITEM)

Item 87-7 - MPQAD Inspection Report Review.

P. Majeski requested the status of the review being conducted of MPQAD inspection reports for Remedial Soils work performed prior to 9/82. R. Sevo will respond. (OPEN ITEM)

Item 87-8 - Revised Loading Schedule for the E/W17 Piers.

J. Oliveira requested that the Contractor provide details of the revised loading schedule associated with the enlarged straight shafted design for piers E/W17. J. Fisher will respond. (OPEN ITEM)

Item 87-9 - Concrete Placement Schedule for the Permanent Auxiliary Building Underpinning Wall.

D. Zito asked for a schedule detailing monthly concrete placement quantities planned during construction of the permanent wall for the Auxiliary Building. J. Fisher will respond. (OPEN ITEM)

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Midland Plant, Units 1 & 2  
Consumers Power Company

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Item 87-10 - Reverification of Previously Mapped Cracks at the BWSTs.

D. Zito requested results of the reverification survey on previously mapped cracks at the BWSTs. E. Cvikl will respond. (OPEN ITEM)

Item 87-11 - Reserve Capacity Loading for Piers CT 1/12.

E. Cvikl stated that jacking for input of reserve capacity loading (RCL) at piers CT 1/12 was performed this weekend. Lift off was attained at 120% of the specified load. Both piers were loaded to 150% of design load and locked off. (INFORMATION ITEM)

Response Items

No response items were addressed.

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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
Midland, Michigan  
May 15, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Kelleher E. Cvikl	R. Sevo J. McMaster	D. Benvie D. Zito P. Majeski
			<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 87-12 - Auxiliary Building Underpinning Activities.

Installation of expansion anchors for the pier E17 upper bearing and leveling plate assembly has begun.

Placement of grout pads for the W5 grillage support columns in the drop pit was completed.

(INFORMATION ITEM)

Item 87-13 - SWPS Backpacking Material and Method.

J. Fisher discussed backpacking modifications for the SWPS access shaft. During installation of lagging, clay will be placed beneath the bottom of each lagging piece and the remaining area behind the lagging will be back-packed with sand. Previously, it was stated that clay would only be placed at the bottom of every second or third lagging. Excelsior will be placed on an as needed basis in the spaces between the lagging. (Item 79-28 and 79-34 remains OPEN) (INFORMATION ITEM)

Item 87-14 - Revised Loading Schedule for the E/W17 Piers.

J. Kelleher provided the Assessment Team with a copy of the revised loading schedule for the redesigned E/W17 piers. (Item 87-8 remains OPEN) (INFORMATION ITEM)

New Items

Item 87-15 - Excavation Conveyor at the SWPS.

J. Oliveira asked for the manufacturers technical data associated with the requirements for the paddle blade angle on the excavation conveyor. It was noted that the conveyor may have been set up at too high an angle to allow proper transport of excavated soil. (OPEN ITEM)



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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
Midland , Michigan  
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Item 87-16 - Weldcrete.

E. Cvikl reported that weldcrete will not be used for any applications related to the underpinning. The decision not to use weldcrete is based on a concern with its use in a moist environment. It had previously been stated that weldcrete would be used for temporary underpinning applications. (INFORMATION ITEM)

Item 87-17 - Installation of Expansion Anchors in Lean Concrete.

D. Benvie noted that installation of expansion anchors in lean concrete for the Kc5 drift supports had resulted in issuance of an NCR. The NCR was written because procedural requirements only address installation of expansion anchors in structural concrete. Mr. Benvie asked if the procedures will be revised to include installation of expansion anchors in fill concrete. J. Kelleher replied that all expansion anchors are required to be installed in structural concrete. This requirement is to ensure the load carrying ability of the expansion anchors. As a result, no procedural change will be made. The disposition for the NCR written to address the Kc5 drift support expansion anchors installed in the lean concrete will require that these expansion anchors be reinforced to meet design requirements. (CLOSED ITEM)

Response Items

Item 87-18 - Auxiliary Building Access Shaft Grout Shims.

E. Cvikl responded to the Assessment Teams question concerning use of grout shims for the wales in the Auxiliary Building access shafts. Engineering has reviewed the use of grout shims at the interface of the wale and applicable piers. The possible effects of grout shrinkage and equipment vibrations on the grout shims were evaluated. As a result, the shims used for the E/W10 pier struts will be constructed of steel instead of grout. (CLOSES ITEM 85-29)

Item 87-19 - MPQAD Inspection Report Review.

J. McMaster discussed the review of MPQAD inspection reports for underpinning work performed prior to 9/82. Certification of inspectors to review these inspection reports is required. Once the inspectors have been certified, review of approximately 1300 inspection reports for underpinning work accomplished prior to 9/82 will be performed. It is expected that this review will be completed by the last quarter of this year. (CLOSES ITEM 87-7)



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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
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May 15, 1984

Item 87-20 - Concrete Placement Schedule for the Permanent Auxiliary  
Building Underpinning Wall.

J. Kelleher provided the Assessment Team with a copy of the schedule detailing monthly concrete placement quantities planned during construction of the permanent underpinning wall for the Auxiliary Building. (CLOSES ITEM 87-9)

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

Held at Midland Site  
Midland, Michigan  
May 16, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Kelleher E. Cvikl	J. McMaster R. Sevo	D. Benvie L. Rouen D. Zito
			<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 87-21 - Auxiliary Building Underpinning Activities.

Placement of grout was completed for the pier E17 lower leveling plate.  
Concrete placement for the W5 pier shaft was completed to El. 597'.  
Excavation of the E5 pier shaft was completed .

(INFORMATION ITEM)

Item 87-22 - SWPS Underpinning Activities.

J. Fisher reported that installation of the lower level bracing for the soldier pile wall along the east side of the SWPS is scheduled to begin next week.  
(INFORMATION ITEM)

Item 87-23 - Concrete Placement at BWSTs Ring Beam Addition.

J. Fisher reported that concrete was placed yesterday for a portion of the ring beam addition at both BWSTs. (INFORMATION ITEM)

New Items

Item 87-24 - Control Tower Instrumentation Readings.

D. Benvie requested that Resident Engineering provide the Assessment Team with instrumentation data associated with reserve capacity load jacking performed at piers CT 1/12 last weekend. E. Cvikl 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  
May 16, 1984

Item 87-25 - Instrumentation Reading Schedule at the SWPS.

D. Benvie asked if an instrumentation reading schedule has been developed for monitoring SWPS building movement during filling of the service water bays. E. Cviki will respond. (OPEN ITEM)

Item 87-26 - West Buttress Access Shaft Footing.

J. Fisher reported that a crack in the west buttress access shaft footing has been found in the vicinity of the Level C Wales. The cause of cracking is presently under investigation. (INFORMATION ITEM)

Response Items

Item 87-27 - Revised Loading Schedule for the E/W17 Piers.

The Assessment Team has reviewed the revised loading schedule associated with the redesigned E/W17 piers. The schedule indicates that each middle pier will be loaded to 30 % of the specified design load. Once the concrete and grout for the two side piers constructed adjacent to each of the middle piers has attained the required compressive strength, the entire pier unit will be loaded in accordance with the original design requirements. The Assessment Team concludes that the loading sequence is appropriate for the redesigned piers. (CLOSES ITEM 87-8)

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

Held at Midland Site  
Midland, Michigan  
May 17, 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  
May 18, 1984

Present For;

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Kelleher J. Darby	R. Sevo	D. Benvie D. Zito W. Kilker
			<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 87-28 - Auxiliary Building Underpinning Activities.

Concrete placement for pier E5 was completed to El. 597'.

Excavation of the Kc5 pier shaft to subgrade and installation of the ring beam was completed. Bell excavation is in progress.

Carlson meter installation was completed for the E/W5 piers.

Excavation of the pier shaft to the top of the bells and installation of the ring beam for piers CT 3/10 has been completed.

(INFORMATION ITEM)

Item 87-29 - Reverification of Previously Mapped Cracks at the BWSTs.

J. Darby stated that a report by Resident Engineering summarizing their reverification survey of previously mapped cracks at the BWSTs will be issued next week. (Item 87-10 remains OPEN) (INFORMATION ITEM)

New Items

Item 87-30 - FSO Controlled Document Review.

J. Fisher reported that the monthly review of the FSO controlled documents for May will be performed on 5/21/84. (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 18, 1984

Item 87-31 - CCP/Soils Interface.

G. Murray provided the Assessment Team with a copy of the guidelines outlining interaction between FSO and Balance of Plant relating to CCP work. Contained in the guidelines are the responsibilities for performing and inspecting work activities where Balance of Plant work is affected by Remedial Soils work. (INFORMATION ITEM)

Item 87-32 - Inspection of SWPS Instrumentation.

W. Kilker asked what was the nature of the NCR written on welding inspection for the SWPS instrumentation. J. Darby and G. Murray stated welding inspection was not performed during installation of the instrumentation. An inspection of the instrumentation welding is scheduled for early next week to verify design compliance. (CLOSED ITEM)

Item 87-33 - Weekly Report # 86.

The text of Weekly Report # 86 was reviewed. It was determined that all open items had been previously identified. (INFORMATION ITEM)

Response Items

Item 87-34 - Instrumentation Reading Schedule.

J. Darby responded to the Assessment Team's question concerning reading of instruments during filling of the service water bays. It is planned to read the SWPS instruments just prior to filling of the bays and immediately after filling has been completed. Another reading will be taken 4 hours later. After this reading, the normal instrument reading schedule will be resumed. Instrumentation readings may be taken during the filling operation if time permits. (CLOSES ITEM 87-25)

Item 87-35 - Upper Leveling Plates.

J. Kelleher reported that the FCR revising welding requirements to reduce warping of the upper leveling and bearing plate assemblies has been issued. The FCR reduces the size of the welds required to fasten the leveling and bearing plates together from 0.5 in. to 0.25 in. The Assessment Team believes that reduction of the weld size will be effective in reducing the warping that has previously occurred with the upper leveling and bearing plate assembly. (CLOSES ITEM 79-26)





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

Weekly Report No. 88  
May 20, 1984 through May 26, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	5/22 - 5/26
D. Benvie	5/21 - 5/24
D. Zito	5/21 - 5/24
W. Kilker	5/20 - 5/22
L. Rouen	5/20 - 5/22

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	5/23 - 5/26
B. Metros	5/20 - 5/22

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
5/21 - 5/25	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting
5/25	Consumers Power Bechtel MPQAD Stone & Webster	Document Control Information Meeting

Underpinning and Remedial Soils - Construction

Piers E/W5: The north support steel and the spherical bearing installations were completed in preparation for installation of the grillage beams.

Pier Kc8: The excavation of the pier shaft continued.

Pier E17: The load transfer was completed for the middle portion of the enlarged shaft.

Piers CT 3/10: The installation of the bell reinforcing steel continued.

Pier Kc5: Concrete placement was completed. Installation of the leveling plates began.

Pier W17: No further activity was performed pending fabrication of lagging materials to support the enlarged shaft.

E/W Access Shafts: Excavation and installation of lagging continued.

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SWPS: Installation of the upper level wales continued on the north and west sides. Excavation, lagging installation and backpacking continued on the east side.

BWST: Reil. forcing steel, formwork installation and concrete placement continued.

Cathodic Protection: Trench excavation and backfilling work continued.

#### Assessment Team Observations - Construction

Bell excavation and installation of bell bracing for piers CT 3 and Kc5 was observed by the Assessment Team. Sketches showing horizontal and vertical offsets for the bells were made available to the craftsmen at the work locations. These sketches are on effective tool, ensuring that bells are excavated to the proper dimensions. During excavation of the bells, the Contractor was careful to expose small areas of the bells prior to installation of the bracing for both piers. Bracing for each bell side was installed as excavation for each section of the bell was completed. This sequence of excavation and installation of bracing for both bells assured the stability of the in-situ soil.

During mass excavation of the west access shaft, a concrete spall was found at the corner of the buttress access shaft adjacent to one of the Level C wale bearing plates. The Contractor immediately halted excavation within the access shaft until Engineering had evaluated the impact of the spall on the Level C wales. The Assessment Team believes that the Contractor acted prudently, recognizing the potential impact of the spall on the load-carrying ability of the Level C wales. Once Engineering completed their evaluation of the spall and determined that the Level C wales had not been affected by the spall, excavation was allowed to resume.

The Assessment Team recently expressed concerns relative to the type of backpacking material and method of placement at the SWPS. The Contractor has responded to these concerns by placing clay behind the bottom portion of the lagging which effectively holds the sand backpacking material in place. Additionally, the placement method has been revised to increase the compaction of the installed materials. Based upon observations of the placement method and the backpacking completed to date, the Assessment Team is, in general, satisfied with the revised method.

Subsequent to the completion of the upgrading of the backpacking, surface runoff resulting from a heavy rainfall washed out the backpacking in several areas along the north side of the excavation. The Contractor replaced the backpacking material and installed backfill in the eroded areas near the ground surface. Temporary dikes and sumps were installed to prevent recurrence and plans are underway to upgrade these facilities for longer term usage.

The Assessment Team reviewed a Resident Engineering report describing a recent concrete crack survey of the BWST foundations. No new or enlarged cracks greater than 10 mils were found. Crack patterns are unchanged and there have been no significant changes in crack widths since the last survey conducted

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 Units 1 & 2  
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during 1982. The Assessment Team concludes that the survey and report adequately investigated the possibility of new cracking of these structures.

The Assessment Team reviewed a report concerning the March audit of FSO's controlled documents by the FSO Quality Engineering Group. The Assessment Team concluded that FSO is maintaining its documents in a satisfactory manner.

#### Assessment Team Observations QA/QC

NIR # 26 was issued. This nonconformance concerns the closure of two NCR's related to concrete testing procedural deficiencies. The potential for hardware nonconformance was properly dispositioned. However, the Assessment Team believes that the NCRs did not adequately address implementation of corrective action to ensure future testing is properly performed.

The Assessment Team observed the control of grout mix proportions by use of a flow cone and the making of several sets of test cube samples during the grouting of the leveling plates at pier E5. Both were performed in accordance with the procedures. The area to be grouted was kept damp and excess water was removed just prior to placement. The formwork was acceptable and the temperature conditions were checked by the Quality Control Inspector. The Assessment Team verified that the Inspector was properly certified.

The Assessment Team has been following the progress of the upgrading of document control and processing FCR's. Significant progress has been noted in achieving their goals in most areas. However, the Assessment Team believes increased effort is required to finalize the revised methodology for retirement of "one-time deviations" FCR's.

#### 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)
86	Support Brackets for Kc5.89, Kc6 and Kc7 Turbine Building	5/18/84	

#### 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)
26	Closure of Procedural Deficiencies	5/25/84	

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 Independent Assessment of Underpinning

### 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
79-28	SWPS Backpacking Material	88-6
79-34	SWPS Backpacking Placement	88-6
81-21	BOP Construction Verification of Soils Work	88-13
82-9	Trend Analysis	Open
86-4	Auxiliary Building Crackmapping	88-7
86-16	Vibration of BWST Concrete	Open

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 Units 1 & 2  
 Independent Assessment of Underpinning

<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
87-5	Implementation of the QAP Task Force Recommendations	Open
87-10	Reverification of Previously Mapped Cracks at the BWSTs	88-8
87-15	Excavation Conveyors at the SWPS	88-10
87-24	Control Tower Instrumentation Reading	88-9
88-24	FSO Quality Engineering Group Controlled Document Audit	Open
88-25	Documentation of Buttress Access Shaft Spall Repair	Open
88-26	NCR Disposition of a Concrete Air Entrainment Deficiency	Open

WE Keller  
 Project Engineer

WE Keller for K S Fuchs  
 Project Manager



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

Held at Midland Site  
Midland, Michigan  
May 21, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl

MPQAD

J. McMaster

Stone & Webster

D. Benvie  
D. Zito  
W. Kilker  
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 88-1 - Auxiliary Building Underpinning Activities.

Excavation of the shafts to subgrade and installation of the concrete mudmats was completed for piers CT 3/10.

Placement of concrete for piers E/W5 and grouting of the E5 lower leveling plate was completed.

Excavation of the bell and placement of the bell mudmat was completed for pier Kc5.

Excavation for pier Kc8 is in progress.

Installation of the upper and lower leveling and bearing plates for pier E17 was completed.

(INFORMATION ITEM)

Item 88-2 - SWPS Underpinning Activities.

J. Fisher reported that excavation of the SWPS east access shaft will be completed this week allowing installation of the lower level wales to begin. Excavation of the drop pit to pier No. 1 is scheduled to begin in mid-June.

(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  
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Item 88-3 - West Buttress Access Shaft Concrete Spall.

J. Fisher reported that mass excavation in the west access shaft has been halted until Engineering has completed their investigation of the concrete spall at the corner of the west buttress access shaft wall adjacent to the Level C Wale bearing plate. E. Cvikl stated that Engineering is presently reviewing the wale construction sequence for possible influence on development of the crack. The Assessment Team requested that Resident Engineering provide the results of their investigation once it is completed. (OPEN ITEM)

Item 88-4 - E/W8 Grillage Interference.

J. Fisher reported that removal of approximately 6 in. from the top of the concrete mudrats placed between the E/W5 piers and the containment drop pits will be required to allow installation of the grillages. (INFORMATION ITEM)

Item 88-5 - HVAC Foundation Pad.

J. Fisher reported that excavation to allow construction of the HVAC foundation pads adjacent to the Unit 2 containment will begin today. (INFORMATION ITEM)

Response Items

Item 88-6 - SWPS Backpacking Material and Placement.

The Assessment Team has monitored the Contractor's recent activity related to backpacking techniques and material modifications for the SWPS east access shaft. The Assessment Team had expressed concern with the method and type of backpacking originally being used. In response to this concern, the Contractor modified the backpacking installation which included the placement of clay beneath the bottom of each lagging piece. This has proved effective in maintaining the soil installed in the remaining area of the lagging in-place. Additionally, the level of effort implemented to tamp the backpacking in-place has been satisfactory in maintaining contact between the lagging and in-situ soil. The uniform methodology being implemented by the craftspeople has resulted in a consistently acceptable installation. Based on the quality of the backpacking performed since implementation of these modifications, the Assessment Team believes that adequate bearing between the lagging and in-situ soil is being achieved, ensuring the overall stability of the excavation. The Assessment Team will continue to monitor the adequacy of the backpacking. (CLOSES ITEMS 79-28 and 79-34)

Item 88-7 - Auxiliary Building Crackmapping.

J. McMaster provided the Assessment Team with a copy of the results of the MPQAD review of the recent crack mapping of the Auxiliary Building. The crack mapping was conducted after initial jacking of the CT 1/12 piers. Based on a review of the crackmapping Subcontractor's documentation and field activity associated with the mapping of 2000 cracks only two NCRs were issued. One was issued because of a failure by the Subcontractor to mark and record the

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

Held at Midland Site  
Midland, Michigan  
May 21, 1984

elongation of one crack. The other NCR was written due to a missing signature on a data sheet. The Assessment Team believes these results demonstrate effective implementation of the crack monitoring program. (CLOSES ITEM 86-4)

Item 88-8 - Reverification of Previously Mapped Cracks at the BWSTs.

E. Cvikel provided the Assessment Team with a copy of an engineering report detailing the results of a reverification crack survey conducted at the existing BWST ring walls. No new cracks having widths of 10 mils or greater were found. (CLOSES ITEM 87-10)

Item 88-9 - Control Tower Instrumentation Readings.

E. Cvikel provided the Assessment Team with a copy of instrumentation data associated with reserve capacity load (RCL) jacking at piers CT 1/12. Absolute and relative movement of the Control Tower was minimal during the RCL jacking of piers CT 1/12. (CLOSES ITEM 87-24)

Item 88-10 - Excavation Conveyor at the SWPS.

J. Fisher provided the Assessment Team with the manufacturer's technical data for set up of the conveyor system at the SWPS. The conveyor presently is elevated greater than the manufacturer's specified angle of 25°-35°. To assure proper transport of excavated soil on the conveyor, side guards will be added as required to prevent rollback of soil down the conveyor. (CLOSES ITEM 87-15)

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

Held at Midland Site  
Midland, Michigan  
May 22, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl  
P. Goguen

MPQAD

None

Stone & Webster

D. Benvie  
D. Zito  
W. Kilker  
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 88-11 - Auxiliary Building Underpinning Activities.

Bell excavation for piers CT 3/10 is in progress.

Reinforcing steel installation for pier Kc5 is in progress.

Excavation of the west access shaft to El. 591.5' has begun.

(INFORMATION ITEM)

Item 88-12 - Vibration of BWST Concrete.

F. Goguen discussed modifications which will be implemented to ensure proper vibration of concrete in areas of heavy reinforcing steel congestion. Reinforcing steel will be bundled to allow passage of a pencil vibrator into congested areas. Additionally, a pea gravel concrete mix with a 5-6 inch slump will be used to ensure full penetration of the concrete into the congested areas. The Assessment Team will monitor implementation of these modifications for their effectiveness on upcoming concrete placements. (Item 86-16 remains OPEN) (INFORMATION ITEM)

New Items

No new items were discussed.

Response Items

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

Held at Midland Site  
Midland , Michigan  
May 22, 1984

Item 88-13 - BOP Construction Verification of Soils Work.

J. Fisher provided the Assessment Team with guidelines which will be implemented when Balance of Plant (BOP) construction verification is required related to Remedial Soils work. The FSO field engineer responsible for a particular work activity shall notify the appropriate Area and System Teams when BOP verification is required. The BOP Area and System Teams will in turn arrange for the necessary interface with MPQAD. All FSO field engineers have been provided with these guidelines and are familiar with those work activities which require BOP verification. The Assessment Team believes that these guidelines will adequately ensure BOP construction verification of Remedial Soils work as required. (CLOSES ITEM 81-21)

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

Held at Midland Site  
Midland, Michigan  
May 23, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
J. Schaub	J. Fisher	J. McMaster	D. Benvie
	J. Kelleher	R. Sevo	D. Zito
	E. Cvikl		P. Majeski
	B. Brandes		
			<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 88-14 - Auxiliary Building Underpinning Activities.

Installation of the jacks and jackstands for the middle portion of the enlarged E17 pier was completed.

Installation of the upper leveling plates at the jack location closest to the containments was completed for the E/W5 grillages.

Installation of reinforcing steel was completed for pier Kc5.

(INFORMATION ITEM)

Item 88-15 - SWPS Underpinning Activities.

J. Fisher reported that backpacking had been eroded from behind the lagging in several areas yesterday as a result of the heavy rainfall. Additionally, the in-situ soils were eroded from behind the wall in limited areas, particularly along the east end of the north wall. FSO will meet with the SWPS underpinning Subcontractor later today to decide on a course of action for repair of these eroded areas. (INFORMATION ITEM)

New Item

Item 88-16 - Control of Surface Drainage at the SWPS.

P. Majeski requested FSO to provide details for future control of surface drainage in the vicinity of the SWPS to prevent reoccurrence of erosion problems experienced during yesterday's rainfall. 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  
May 23, 1984

Item 88-17 - Verification of Survey Layout.

J. Oliveira noted that an NCR had been written because 11 expansion anchors for the middle upper leveling plate at the E5 grillage were incorrectly located. The NCR disposition requires that, these expansion anchors be reinstalled in their correct locations. Mr. Oliveira asked if the "survey loop" is closed during the initial layout process in order to verify correct layout of a construction activity. J. Fisher will respond. (OPEN ITEM)

Item 88-18 - FSO Controlled Document Review.

J. Fisher stated that the monthly review of the FSO controlled documents for May was completed. The results of the review will be made available to the Assessment Team tomorrow. (INFORMATION ITEM)

Item 88-19 - Drift Invert Concrete.

D. Zito noted that a small portion of the concrete face for the Kc3 to Kc4 drift invert had broken off in the vicinity of the W5 pier where soil had been excavated from beneath the drift invert. The break occurred along the flange of a steel reshore member embedded in the drift concrete. Mr. Zito asked if provisions have been made to prevent this condition from occurring in other drift invert areas. J. Fisher will respond. (OPEN ITEM)

Response Item:

Item 88-20 - West Buttress Access Shaft Concrete Spall.

E. Cviki reported that engineering has completed their evaluation of the concrete spall at the corner of the west buttress access shaft wall. The space which is adjacent to the level C wale bearing plate is superficial, extending back only to the first layer of reinforcing steel. After reviewing the construction sequence associated with the level C wale installation, it is thought that preheating of the wales and/or the bearing plates in the vicinity of the buttress access shaft may have contributed to the spalling. It is not believed that this spalling has decreased the load carrying ability of the wales. In order to verify this, the tension of the bearing plate bolts will be checked. If the actual bolt torque agrees with the design torque, this indicates that the ability of the spalled area of the wall to carry the normal load from the wales has not been diminished. Excavation in the west access shaft will then be allowed to resume. Repair of the spalled area will be accomplished in the future. (CLOSES ITEM 88-3)

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

Held at Midland Site  
Midland, Michigan  
May 24, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
J. Kelleher  
E. Cvikl  
J. Givens

MPQAD

J. McMaster  
R. Sevo

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 88-21 - Auxiliary Building Underpinning Activities.

Concrete placement was completed for pier Kc5.

Load transfer for the middle portion of the enlarged E17 pier is scheduled for today.

(INFORMATION ITEM)

Item 88-22 - SWPS Underpinning Activities.

J. Givens discussed rework of backpacking in areas behind the soldier pile wall which had been eroded during the heavy rainfall on 5/22/84. All areas where backpacking and in-situ soil have been eroded will be reworked. Eroded areas of the in-situ soil which are accessible behind the wall will be filled in with sand placed from the top of the wall. All other eroded areas will be filled in with sand placed between the lagging pieces. All new material will be tamped into place to ensure complete filling of the voids created during the erosion process. In conjunction with filling the voids behind the soldier pile wall, backpacking directly behind and between the lagging will be accomplished with clay and sand as before. (INFORMATION ITEM)

New Items

Item 88-23 - Central Document Control Deficiency Notification.

P. Majeski asked when deficiencies are found during review of the FSO controlled documents are these findings conveyed to the Central Document Control.

J. Fisher stated that any deficiencies discovered during periodic reviews of their controlled documents are forwarded to the Central Document Control for resolution if the deficiencies involve changes to the original document. Such deficiencies include errors with the controlled document register or a missing R stamp. (CLOSED ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 24, 1984

Item 88-24 - FSO Quality Engineering Group Controlled Document Audit.

P. Majeski noted that as a result of the FSO controlled document review performed by FSO Quality Engineering group it was recommended that a more diligent effort is needed in replacing illegible and torn drawings. Mr. Majeski asked what action has or will be taken by FSO to address this recommendation. (OPEN ITEM)

Item 88-25 - Documentation of Buttress Access Shaft Spall Repair.

D. Zito asked what method is used to document the conditions and remedial measures contained in the Safety Concern Evaluation Report written due to concrete spalling on the Buttress Access Shaft wall. It was noted that the buttress access shaft is a non Q structure and therefore an NCR is not required. E. Cviki will determine what documentation is used to document the contents of the Safety Concern Evaluation Report. (OPEN ITEM)

Item 88-26 - NCR Disposition for Concrete Air Entrainment Deficiency.

It was noted that an NCR written because a concrete air entrainment test taken during concrete placement at pier W5 was not performed at the point of placement, but rather at the back of the concrete truck J. Oliveira said the NCR disposition adequately addressed the hardware issue associated with the testing and the air entrainment test results were acceptable. However, the NCR did not address implementation of corrective action to ensure future testing is performed properly. Mr. Oliveira requested that this concern be addressed. MPQAD will respond. (OPEN ITEM)

Item 88-27 - SWPS Instrumentation Data.

E. Cviki provided the Assessment Team with a copy of instrumentation data readings taken before, during and after filling of the SWPS bays. A review of the data indicates that absolute downward movement of the SWPS was minimal varying from 0.01 in. at the north end of the structure to 0.04 in. at the south end. (INFORMATION ITEM)

Response Items

Item 88-28 - Drift Invert Concrete.

J. Kelleher responded to the Assessment Team question concerning cracking of the drift invert concrete. The cracks resulted from loads applied to the invert. There may still be some localized areas where soil excavation beneath drift inverts will leave the concrete unsupported but it is not anticipated that the loads in other drift invert areas will be applied as was the case near pier W5. (CLOSES ITEM 88-19)

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

Held at Midland Site  
Midland, Michigan  
May 24, 1984

Item 88-29 - Verification of Survey Layout.

J. Fisher responded to the Assessment Team question concerning verification of the survey layout for the expansion anchors at the E5 grillage Y-jack location. Initially, control points are laid out in a closed loop verifying correct location of the control points. Control points, in turn, serve as reference markers for layout of such items as these expansion anchors. Contrary to normal practice, in this particular case the anchor locations were not adequately checked with respect to the control point reference locations. (CLOSES ITEM 88-17)

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

Held at Midland Site  
Midland, Michigan  
May 25, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Kelleher E. Cvikl	J. McMaster R. Sevo	P. Majeski <u>Parsons Brinckerhoff</u> J. Oliveira

PURPOSE

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

DISCUSSION

Status Items

Item 88-30 - Auxiliary Building Underpinning Activities.

The mud mats for piers CT/3 and CT/10 will be placed today.

The loose concrete in the spall area on the corner of the West Buttress Access Shaft will be removed to eliminate a potential safety hazard.

(INFORMATION ITEM)

Item 88-31 - SWPS Underpinning Activities.

The backpacking required to repair those areas washed out during the heavy rainfall this week has been completed. (INFORMATION ITEM)

New Items

There were no new items discussed.

Response Items

Item 88-32 - Control of Surface Drainage at the SWPS.

J. Fisher provided the Assessment Team with a sketch showing the proposed method to prevent flow of surface runoff into the SWPS Access Shaft. The Assessment Team is satisfied that the proposed berms and sumps will prevent flow into the Access Shaft in the future. (CLOSES ITEM 88-16)

Item 88-33 - NCR Disposition for Concrete Air Entrainment Deficiency.

J. McMaster indicated that since the hardware nonconformance was properly dispositioned and the individual responsible for the concrete testing is now aware of procedural requirements, it is not necessary to reopen the NCR or write a QAR. P. Majeski acknowledged the response but stated that the item will remain open pending evaluation. (Item 88-26 remains OPEN) (CLOSED ITEM)





# STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

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V/PP			
VO			
FAO			
EGA			
ENF		File	✓

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

June 6, 1984

J.O. No. 14358  
 Ref. MPF 89

Attention: Mr. B. L. Burgess

DOCKET NO. 50-339/330  
 MIDLAND PLANT UNITS 1 & 2  
 INDEPENDENT ASSESSMENT OF UNDERPINNING  
 REPORT NO. 89

A copy of the Independent Assessment of Underpinning Weekly Report No. 89 for the period of May 27, 1984 through June 2, 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

~~84062-L-398~~

17 pp

JUN 18 1984



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

Weekly Report No. 89

May 27, 1984 through June 2, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	5/27 - 5/29
D. Benvie	5/29 - 6/1
D. Zito	5/29 - 6/1
W. Kilker	5/29 - 6/2
L. Rouen	5/20 - 6/2

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	5/27 - 5/29
B. Metros	5/30 - 6/2

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
5/29 - 6/1	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting
6/1	Consumers Power Bechtel MPQAD Stone & Webster	Weekly Interorganizational Meeting

Underpinning and Remedial Soils - Construction

E/W5 Grillages: Placement and alignment of the grillage beams was completed. Installation of the upper leveling and bearing plate assemblies for the three jack locations at each grillage is in progress.

Pier Kc8: Bell excavation and placement of the concrete mudmat was completed. Reinforcing steel installation is in progress.

Pier E17: Routine reworking following initial load transfer of the center portion of the pier was completed. Extension of the drift to permit enlarging the pier has begun.

Piers CT 3/10: Placement of bell concrete was completed. Installation of shaft reinforcing steel and instrumentation is in progress.

Pier Kc5: Installation of the upper and lower leveling and bearing plate assemblies was completed.

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Pier W17: No further activity was performed pending fabrication of lagging materials to support the enlarged shaft.

East/West Access Shaft: Excavation for zones Y/Z3 (El. 591.5') neared completion.

SWPS: Installation of the upper level wales continued on the north and west sides. Excavation of the east access shaft was extended to El. 619.

BWST: Reinforcing steel, formwork installation, and concrete placement continued.

Cathodic Protection: Trench excavation and backfilling work continued.

Unit No. 2 HVAC Foundation Pad: Excavation for installation of the foundation pad was completed.

#### Assessment Team Observations - Construction

At the Auxiliary Building, the Assessment Team observed the Contractors' activities associated with extending the east and west access shafts to El. 591.5'. Each of the temporary slopes from the shaft perimeter toward the E/W8 grillages was excavated in accordance with the design drawings. Installation of lagging and backpacking for the access shafts followed closely as the excavation proceeded, minimizing the potential for loss of ground. The Contractor was careful to minimize vertical and lateral over excavation as the work progressed. After installation of several lagging pieces for each wall panel, the craftsmen tamped the backpacking into place, thus ensuring proper bearing between the lagging and in-situ soil. Seepage of groundwater into the southeast corner of the east access shaft was effectively controlled. The Contractor installed a horizontal drain into the soil behind the wall and the area around the drain pipe was then grouted, forcing the water through the pipe and in turn to a sump.

Installation of the E/W5 grillage beams began this week. The Assessment Team observed placement, alignment and the independent survey for final location verification of the grillage beams. The beams were carefully moved through the highly restrictive access area and set at their placement locations without damage to the members. Transverse and longitudinal alignment and plumb were verified throughout the installation process. Scribe marks on top of the beams served as the primary alignment points although periodic checks were made at the beam and bearing pad interface for additional survey control. Once the Subcontractor completed placement and alignment of the beams, the Contractor conducted an independent verification survey of the installation. The survey verified that the beam locations were accurate, satisfactorily completing the placement and alignment activity.

The Assessment Team inspected the completed reinforcing steel and embedded plate installations for piers CT 3/10. The inspection verified that the

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number, size, location and spacing of reinforcing steel conformed with the design drawings. Additionally, the stagger for the Fox-Howlett couplers and location of the embedded plates on the north side of the piers were determined to be in compliance with design requirements.

Excavation, lagging installation, and backpacking of the SWPS east access shaft is nearing completion. Aided by careful in-process inspection and supervision by both Resident Engineering and Field Engineering and the use of a consistent installation methodology, the backpacking continues to improve.

The Assessment Team over-viewed concrete pre-placement and placement activities for construction of the Unit 2 BWST ring beam addition. Prior to placement, the area was thoroughly cleaned of all debris and water was removed by means of sumping. Forms were adequately braced and tight to prevent loss of mortar. Removable formwork spreaders were installed to ensure proper reinforcing steel clear cover was maintained during concrete placement. Pre-planned concrete placement points were designated and backup concrete vibrators were made available to ensure continuous placement of concrete once the work started. During placement, concrete was placed so that the maximum allowable lift thickness was not exceeded. In areas of heavy reinforcing steel congestion, the steel was bundled to allow passage of pencil vibrators into all areas of the placement to ensure thorough consolidation of the concrete. The Assessment Team concluded that the Contractors' activities for concrete placement, especially in areas where the reinforcing still is heavily congested were acceptable.

Assessment Team Observations - QA/QC

The Assessment Team reviewed the FSO report summarizing the results of the self audit conducted at their controlled drawing station and at various workprint stations. Five hundred and twenty one documents out of a total of 2,150 were reviewed for correct revision number, proper posting of attachments, legibility and proper identification stamps. The report indicated that missing attachments to drawings continues to be a problem but that the computerized register was accurate. Actions being taken to address the identified problem include the addition of clerical staff to maintain the documents and the reduction in the backlog and cycle time for distribution of documents. The Assessment Team believes these actions to be appropriate in addressing the problems noted during the self-audit. The Assessment Team expects the results of the next self-audit, scheduled for mid-June, to show fewer attachment-related problems.

The Assessment Team reviewed a group of NCRs and 10 QARs that were recently dispositioned. In general, the descriptions contained on these MPQAD forms were clear and concise. The nonconforming conditions were detailed, including occasional sketches, and the resulting dispositions were complete in terms of addressing the specific nonconformance plus any document changes that may have been required. In the opinion of the Assessment Team, one of these NCRs was vague in terms of the information that had been available for evaluation of the disposition.

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#### Work Activity Packages

The following Work Activity Packages (WAPs) 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)
86	Support Brackets for Kc5.89, Kc6 and Kc7 Turbine Building	5/18/84 5/31/84

#### 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)
26	Closure of Procedural Deficiencies	5/25/84

#### 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 item 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	89-27 -
71-17	Computerized Civil Drawing Register	Open
74-21	US Testing Corrective Action	Open



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<u>Item No.</u>	<u>Description</u>	<u>Closure</u>
82-9	Trend Analysis	89-27
86-16	Vibration of BWST Concrete	89-15
87-5	Implementation of the QAP Task Force Recommendations	89-11
88-24	FSO Quality Engineering Group Controlled Document Audit	89-26
88-25	Documentation of Buttress Access Shaft Spall Repair	Open
88-26	NCR Disposition of a Concrete Air Entrainment Deficiency	89-12
89-7	Level C Wale Bearing Plate Gap	Open
89-10	Access Shaft Soldier Piles	Open
89-23	Incorporation of "One Time Deviation" FCRs	Open

*J.A. Benvie for W.E. Kilke*  
 Project Engineer

*J.A. Benvie for A.S. Fuchs*  
 Project Manager

Notes of Daily Meeting  
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Consumers Power Company

Held at Midland Site  
Midland, Michigan  
May 28, 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  
May 29, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
R. Wieland	J. Fisher J. Kelleher E. Cvikl	J. McMaster R. Sevo	P. Majeski D. Benvie D. Zito
			<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 89-1 - Auxiliary Building Underpinning Activities.

Concrete placement was completed for the CT 3/10 pier bells.

Installation of the bearing plates is in process for the jack locations at the E/W5 grillages.

Load lock off has been completed for the middle portion of the enlarged E17 pier. Routine rejackng is in progress.

Shaft excavation for pier Kc8 has proceeded to the top of the bell.

Excavation in the east and west access shafts continued.

(INFORMATION ITEM)

Item 89-2 - SWPS Underpinning Activities.

J. Fisher reported that excavation of the east access shaft has resumed. Excavation work had been halted while areas behind the lagging which had been washed out during last week's heavy rainfall were repaired. (INFORMATION ITEM)

Item 89-3 - Vibration of BWST Concrete.

J. Kelleher reported that a pea gravel concrete mix will not be used for the BWST ring beam addition. Previously it was reported that a pea gravel would be used to ensure full penetration of concrete into access of high reinforcing steel congestion. It is still planned to bundle rebar and use pencil vibrators to ensure proper vibration of concrete in congested areas. (Item 86-16 remains OPEN) (INFORMATION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 29, 1984

Item 89-4 - Trend Analysis.

J. McMaster stated that the first monthly report summarizing the results of the MPQAD tracking activity of Remedial Soils related NCRs will be issued this week. This tracking activity is being performed to compliment the M-2 manual trending which is ongoing. (Item 64-10 and 82-9 remain OPEN) (INFORMATION ITEM)

New Items

Item 89-5 - SWPS Instrumentation Readings.

E. Cviki reported that one of the electrical extensometers in the SWPS had shown an alert level reading over the weekend. A subsequent check of the mechanical dial gage on the extensometer did not indicate that the alert level had been reached. It is believed that water drainage from a pipe above the extensometer may have affected the electrical instrumentation reading. Resident Engineering is presently investigating the cause of the alert level reading. (INFORMATION ITEM)

Item 89-6 - MPQAD Trend Reports.

D. Zito requested that MPQAD provide copies of the M-2 manual trending reports for February 1984 through April 1984. J. McMaster will respond. (OPEN ITEM)

Item 89-7 - Level C Wale Bearing Plate Gap.

P. Majeski stated that he observed a small gap along the edge of the Level C wale bearing plate adjacent to the spalled concrete on the West Buttress Access Shaft wall. Mr. Majeski requested that FSO or Engineering determine if the gap is related either to spalling or the result of movement. E. Cviki will respond. (OPEN ITEM)

Item 89-8 - Hold Tags for Tubular Steel Lagging.

P. Majeski noted that a Hold Tag describing welding deficiencies associated with a tubular steel lagging piece had been removed and reattached to a piece of wood lagging. It was noted that recent correspondence from Bechtel requested the Underpinning Subcontractor to reinstruct it's employees as to the requirements of the NCR Hold Tag system. Mr. Majeski asked if this retraining has been completed. J. Fisher will respond. (OPEN ITEM)

Item 89-9 - Service Water Line Backfill.

J. Oliveira stated that during inspection of the backpacking behind the soldier pile wall along the north side of the SWPS a zone of loose backfill was found beneath the west 36 in. diameter service water line of Train A. Mr. Oliveira asked what will be done to correct this situation. 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  
May 29, 1984

Item 89-10 - Auxiliary Building Access Shaft Soldier Piles.

J. Fisher reported that two soldier piles in each access shaft were not installed to their full design length. The soldier piles which were supposed to have been seated onto the east and west buttress access shaft footings were installed approximately 4 in. and 24 in. too short, respectively. Engineering is presently evaluating corrective action. The Assessment Team requested that Engineering provide details of their evaluation once it is completed. E. Cvikl will respond. (OPEN ITEM)

Response Items

Item 89-11 - Implementation of the QAP Task Force Recommendations.

CP Co addressed the Assessment Team question concerning implementation of the QAP Task Force recommendations. The recommendations which include revisions to selected PQCI's, construction procedures and specifications to facilitate construction and inspection of various processes have been accepted by CP Co . Additionally CP Co agrees with the guidelines recommended by the task force for developing new PQCI's, construction procedures and specifications or making major revisions to existing procedures. CP Co has directed the Contractor to implement these guidelines. (CLOSES ITEM 87-5)

Item 89-12 - NCR Disposition for Concrete Air Entrainment Deficiency.

The Assessment Team has reviewed the MPQAD response addressing implementation of corrective action to ensure future concrete air entrainment testing is performed properly. MPQAD stated that the individual who was responsible for the improper concrete testing has been made aware of procedural requirements and no further corrective action is required. A review of additional NCRs by the Assessment Team found one other incident where a procedural deficiency associated with exceeding the time limit for performance of concrete aggregate testing was noted. The NCR response addressed the hardware issue associated with the testing but did not adequately address the procedural deficiency. The Assessment Team believes that the procedural deficiencies identified in these two NCRs should be addressed to ensure future concrete testing is properly performed. As a result NIR # 26 was issued on 5/25/84. (NIR # 26 is OPEN) (CLOSES ITEM 88-26)

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

Held at Midland Site  
Midland, Michigan  
May 30, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher

E. Cvikl

MPQAD

J. McMaster

R. Sevo

Stone & Webster

D. Benvie

W. Kilker

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 89-13 - Auxiliary Building Underpinning Activities.

Placing and alignment of grillage beams for the E/W5 piers is in progress.

Placement of the Kc5 upper leveling plate grout was completed.

Placement of the concrete mudmat for the Kc8 pier shaft was completed.

(INFORMATION ITEM)

Item 89-14 - Trend Analysis.

J. McMaster provided the Assessment Team with a copy of the first monthly report summarizing the results of the MPQAD tracking activity of Remedial Soils related NCRs. (Item 64-10 and 82-9 remains OPEN)

New Items

No new items were discussed.

Response Items

Item 89-15 - Vibration of BWST Concrete.

The Assessment Team observed placement of concrete for the Unit 2 BWST ring beam addition in an area of high reinforcing steel congestion. To address the Assessment Team's concern with proper concrete vibration in heavily congested areas, the Contractor bundled the reinforcing steel and used pencil vibrators to allow access into all areas of the placement. The Assessment Team believes implementation of these modifications was effective in ensuring proper vibration of concrete throughout the placement area. (CLOSES ITEM 86-16)

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

Held at Midland Site  
Midland, Michigan  
May 30, 1984

Item 89-16 - MPQAD Trend Reports.

J. McMaster provided the Assessment Team with copies of the MPQAD manual trending reports for February 1984 through April 1984. (CLOSES ITEM 89-6)

Item 89-17 - Hold Tag Repositioning.

J. Fisher and J. McMaster responded to the Assessment Team question on the repositioning of a Hold Tag for steel lagging to be used in the Auxiliary Building underpinning. The tag had not been intentionally moved but had fallen from the lagging and then re-attached by QC personnel. FSO has nevertheless reinstructed field personnel as to the requirements of the NCR Hold Tag system. (CLOSES ITEM 89-8)

Item 89-18 - Service Water Line Backfill.

J. Fisher responded to the Assessment Team concern of loose backfill beneath the west Train A service water line. After investigation, FSO concurs that the material that extends well beyond the backpacking zone is loose. However, no immediate remedial action is required since in the course of the planned Phase II construction this pipe will be rebedded within the next few months. (CLOSES ITEM 89-9)



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

Held at Midland Site  
Midland, Michigan  
May 31, 1984

Present For:

<u>Consumers Power</u>	<u>Bechtel</u>	<u>MPQAD</u>	<u>Stone &amp; Webster</u>
G. Murray	J. Fisher J. Kelleher J. Darby	J. McMaster R. Sevo	W. Kilker D. Benvie D. Zito
			<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 89-19 - Auxiliary Building Underpinning Activities.

Installation of reinforcing steel in the CT 3/10 pier shafts is in progress.

Installation of jacks and jackstand for pier Kc5 is in progress.

Widening of the E17 drift to enlarge the shaft for the E17 pier is scheduled to begin today.

(INFORMATION ITEM)

Item 89-20 - US Testing Corrective Action.

W. Kilker requested the status for final issuance of the US Testing Quality Control Procedures (QCPs) with the attached work instructions. J. Fisher stated that the QCPs have been approved as noted. US Testing is presently incorporating comments and will resubmit the QCPs for final approval in the near future. (Item 74-21 remains OPEN) (INFORMATION ITEM)

New Items

Item 89-21 - SWPS Drawings.

D. Zito discussed his review of two recently revised SWPS drawings. It was noted that the two drawings which pertain to installation of the plate load test assembly for pier No. 1 were marked up with a large number of comments. One drawing contained 84 comments while 67 comments were identified on the other drawing. Mr. Zito stated that these drawings were quite difficult to use because of the number of comments. (OPINION ITEM)



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

Held at Midland Site  
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Item 89-22 - SWPS Phase II B Cofferdam.

D. Benvie asked if the cantilevered soldier pile wall concept is still being considered for construction of the SWPS Phase II B Cofferdam. J. Fisher stated that the original concept consisting of a braced soldier pile wall cofferdam will be implemented. The braced concept will be used because the bracing is needed to support utilities in addition to providing lateral support for the cofferdam. (CLOSED ITEM)

Item 89-23 - NCR for SWPS Backpacking Erosion.

L. Rouen discussed an NCR written due to erosion of the SWPS backpacking during last week's heavy rainfall. The NCR disposition stated that all eroded areas behind the soldier pile wall would be backfilled as directed by the Resident Geotechnical Engineer. Additionally, the NCR stated a sandbag berm and sumps had been installed around the perimeter of the east and west access shafts to prevent future washouts. Mr. Rouen noted that all the berm and sumps had not yet been installed and asked why the NCR was closed out. J. Fisher responded that the disposition wording should have stated that the sandbag berm and sumps will be installed as part of the corrective action. It was noted that the filling of the eroded areas, which is Q related, had been completed prior to NCR closure. The earth berm and sump system are not considered Q related work. (CLOSED ITEM)

Item 89-24 - SWPS Instrumentation Reading.

J. Darby stated that Resident Engineering completed their investigation of the cause for the alert level readings at one of the SWPS extensometers earlier this week. It was determined that the extensometer has malfunctioned because of water drainage onto the instrument from a pipe above. (INFORMATION ITEM)

Item 89-25 - Assessment Team Comments on a Recent QAR.

L. Rouen summarized the Assessment Team observations on a QAR issued by MPQAD subsequent to the May 23 erosion of soil behind portions of the SWPS access area lagging. The QAR noted that the Subcontractor's procedure does not adequately address means to control "groundwater/rainwater runoff" into the excavation. In reply, FSO offered a lengthy technical definition of groundwater in defense of the content of the existing procedure. The Assessment Team believes that MPQAD could have used an alternate means of requesting a clarification on this issue such as, a Request for Information. In addition, the Team feels that the FSO response was written primarily to refute the QAR. As a more positive approach FSO could have emphasized the actual measures being taken to guard against future potential erosion. (OPINION ITEM)

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

Held at Midland Site  
Midland, Michigan  
May 31, 1984

Response Items

Item 89-26 - FSO Quality Engineering Group Controlled Document Audit.

J. Fisher responded to the Assessment Team question concerning replacement of illegible and/or torn drawings at workprint stations. Field engineers have been directed by memo to ensure that during their daily review of new documents posted at a particular workprint station, they also identify and replace any torn or illegible drawings with copies. (CLOSES ITEM 88-24)

Item 89-27 - Trend Analysis.

W. Kilker stated that the Assessment Team has reviewed the MPQAD Soils NCR Tracking Report issued for the month of April. This Tracking Report contains a summary of the number of Inspection Reports (IRs), the number of inspection sign-offs, the number of attributes inspected and the number of NCRs and non-conforming items. In addition, there is a narrative on any major areas of NCRs and plots relating non-conforming items in several different areas of the number of inspection sign-offs. The Team believes this monthly report combined with the standard monthly M-2 trending report and the monthly FSO trending report adequately address the item raised on NCR trending in the Assessment Team report of October 1983 entitled "Evaluation of Change and Nonconformance Documents." (CLOSES ITEM 64-10 and 82-9)

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

Held at Midland Site  
Midland, Michigan  
June 1, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
E. Cvikl  
J. Kelleher

MPQAD

J. McMaster  
R. Sevo

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

Item 89-28 - Auxiliary Building Underpinning Activities.

The first lift of concrete for the CT 3/10 pier shafts is scheduled for 6/3/84.

Excavation of the Kc8 pier bell was completed. Placement of the bell concrete mudrat is scheduled for today.

(INFORMATION ITEM)

Item 89-29 - SWPS Underpinning Activities.

J. Fisher reported that excavation of the SWPS east access shaft is almost complete. Installation of the lower bracing system is scheduled to begin in the near future. (INFORMATION ITEM)

Item 89-30 - SWPS Drawings.

J. Fisher discussed the two SWPS drawings which have been marked up with a large number of comments. The Assessment Team had previously expressed concern that these drawings were difficult to use because of the large number of comments. Mr. Fisher stated that these two drawings will be revised this weekend to incorporate all of the comments on the drawings and then reissued for erection. (INFORMATION ITEM)

New Items

Item 89-31 - Weekly Report # 89.

The text of weekly report # 86 was reviewed. It was noted in the report that the revised methodology for incorporation of "one time deviations" FCRs has not been finalized. The Contractor had previously reported that

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Consumers Power Company

Held at Midland Site  
Midland, Michigan  
June 1, 1984

"one time deviations" FCRs will either be incorporated onto the applicable drawing directly or referenced on the drawing with a brief description of the FCR. The Assessment Team will verify implementation of an incorporation methodology for "one time deviations" FCRs. (OPEN ITEM)

Response Items

No response items were discussed.



# STONE & WEBSTER MICHIGAN, INC.

P.O. Box 2325, BOSTON, MASSACHUSETTS 02107

PRINCIPAL STAFF			
A	DRPD		
I/PA			
I/EA			
KC			
PAO			
SGA			
ENF		File	

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

June 14, 1984

J.O. No. 14358  
 Ref. MPF 90

Attention: Mr. B. L. Burgess

DOCKET NO. 50-339/330  
 MIDLAND PLANT UNITS 1 & 2  
 INDEPENDENT ASSESSMENT OF UNDERPINNING  
 REPORT NO. 90

A copy of the Independent Assessment of Underpinning Weekly Report No. 90 for the period of June 3, 1984 through June 9, 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.

A. Stanley Lucks  
 ASL/pd

JUN 18 1984

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Weekly Report No. 90  
June 3, 1984 through June 9, 1984

Personnel on Site

Stone & Webster Michigan, Inc.

P. Majeski	6/7 - 6/9
D. Benvie	6/4 - 6/9
D. Zito	6/4 - 6/8
W. Kilker	6/3 - 6/5
L. Rouen	6/3 - 6/5

Parsons Brinckerhoff Michigan, Inc.

J. Oliveira	6/6 - 6/9
B. Metros	6/3 - 6/5

Meetings Attended

<u>Date</u>	<u>Represented</u>	<u>Purpose</u>
5/29 - 6/1	Stone & Webster Bechtel Consumers Power Parsons	Daily Assessment Team Meeting

Underpinning and Remedial Soils - Construction

E/W5 Grillages: Installation of the leveling and bearing plate assemblies for the three jack locations at each grillage was completed. Fitup and welding of cross bracing is in progress.

Pier Kc8: Concrete placement for the pier was completed.

Pier E17: Extension of the drift to permit enlargement of the pier is in progress.

Piers CT 3/10: Placement of the pier shaft concrete was completed.

Pier Kc5: Installation of the jacks and jackstands was completed.

Pier W17: No further activity was performed pending fabrication of lagging materials to support the enlarged shaft.

East/West Access Shafts: Excavation of zones Y/Z3 (to El. 591.5) was completed.

SWPS: Installation of the upper level wales continued on the north and west side. Excavation of the east access shaft was completed. The lower wale installation in the east access shaft began.

BWST: Reinforcing steel, formwork installation and concrete placement continued.

Cathodic Protection: Trench excavation and backfilling work continued.

Assessment Team Observations - Construction

Installation of the E/W 5 grillage beams and the associated hardware continued this week. The Assessment Team observed welding of the transfer beams and dry-packing of one of the upper leveling plates for the grillages. Metal surfaces



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Independent Assessment of Underpinning

were prepared and maintained dry prior to start of welding . The required preheat was attained and verified by the Contractor's welding engineer prior to start of welding. The welding technique implemented including weld progression and placement of multiple weld layers conformed with applicable procedures. Upon completion of the weld, the required welder identification was inscribed at the weld location. A visual inspection of the welds was performed by the Contractor's welding engineer. The inspection was thorough verifying that items such as weld length, throat measurement and cross sectional shape were in accordance with procedures. Prior to the start of drypacking for the upper leveling plate, the concrete surface was presoaked for 24 hrs. The wooden forms were adequately sealed and braced to prevent any loss of drypack during installation. Small workable quantities of grout were mixed with the appropriate amount of water ensuring proper bonding of the grout without any evidence of excess water. Each grout lift was ramed with a tamping rod and hammer, ensuring thorough compaction of the leveling plate grout as it was placed.

The Assessment Team observed placement of concrete for piers Kc8 and CT 3/10. Placement technique including lift height, lateral movement, free drop and concrete vibration conformed with good construction practice. A power failure occurred at the batch plant during concrete placement for pier Kc8, resulting in the formation of an unplanned construction joint. The concrete surface for the joint was cleaned of all laitance and loose concrete. The surface was then roughened to achieve a suitable bond with the subsequent concrete lift. Additional reinforcing dowels and couplers were installed in accordance with the design requirements for unplanned construction joints. The Assessment Team concludes that the Contractor's actions associated with concrete placement for these piers was in accordance with good construction practice.

#### Assessment Team Observation QA/QC

The Assessment Team observed offsite concrete batch plant activities associated with batching of concrete for piers CT 3/10. The aggregate storage bins were clean, and the material stored in the bins were properly segregated and identified. Aggregate samples for moisture content tests were retrieved from the appropriate storage bins. Moisture testing of the aggregate was performed in accordance with ASTM procedures. A review of the calculations performed to determine the aggregate moisture content and the compensation moisture required to meet the batch design indicated that all computations were correct.

The Contractor has recently completed implementation of a computerized drawing register for design documents being used on site. Previously, a manual register had been used for control and distribution of design documents. The primary advantage associated with use of the computerized register is that the register is continuously updated, providing the latest correct document status information. In a recent FSO review of their controlled document no register errors were identified. When the manual system was used, updating of documents status was slow and incidence of error was more frequent. An additional advantage associated with the computerized register is that the status information for a design document including revision number, attachment information and distribution data has been consolidated into

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one source. Previously, distribution data was maintained separately. Finally, implementation of the computerized register has consolidated most of the Contractor and Vendor document data into one source, alleviating the need for multiple registers. Presently, one additional register is still required for revision and distribution data associated with vendors documents. The Assessment Team believes that implementation of the computerized register will enhance the Contractor's ability to maintain and control the construction documents, ensuring that the appropriate design requirements specified are implemented properly.

#### Work Activity Packages

The following Work Activity Packages (WAPs) 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>
46	Yard Area Permanent Dewatering System	(Opened)(Closed) 6/5/84
87	Install Upper Dowels at E/W FIVP Slab	6/5/84 6/5/84

#### Nonconformance Identification Reports

<u>NIR No.</u>	<u>Description</u>	<u>Status</u>
26	Closure of Procedural Deficiencies	(Opened)(Closed) 5/25/84

#### Open Items

Items discussed during the 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.

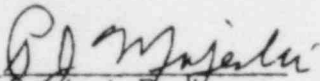
INFORMATION ITEM - An item brought forward to provide general background information regarding work, such as work status or an upcoming design change. No tracking is required.

CLOSES ITEM -XX-XX - This notation identifies an action that closes a previously identified open item. Tracking of the open item stops.

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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>
71-17	Computerized Civil Drawing Register	90-18
74-21	US Testing Corrective Action	Open
88-25	Documentation of Buttress Access Shaft Spall Repair	90-31
89-7	Level C Wale Bearing Plate Gap	Open
89-10	Access Shaft Soldier Piles	90-19
89-31	Retirement of "One Time Deviation" FCRs	Open
90-6	SWPS Duct Bank Cracks	Open
90-7	Upper Leveling and Bearing Plate Assembly Welds	Open
90-9	BWST Ring Beam Addition in Valve Pit	Open
90-35	Concrete Aggregate Testing	Open

  
 Project Engineer

  
 Project Manager

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

Held at Midland Site  
Midland, Michigan  
June 4, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
E. Cvikl  
J. Kelleher

MPQAD

R. Sevo  
J. McMaster

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 90-1 - Auxiliary Building Underpinning Activities.

Placement of the first lift of concrete for the CT 3/10 pier shafts was completed.

Excavation of the Y/Z3 zones (to El. 591.5) in the access shafts was completed.

Installation of the transfer beams at all 3 jack locations was completed for the E/W5 grillages.

(INFORMATION ITEM)

Item 90-2 - Computerized Civil Drawing Register.

J. Fisher stated that the computerized civil drawing register has been completely implemented. All Contractor and Subcontractor drawings have been incorporated into the computerized drawing register. As a result, use of the manual register has been discontinued. FSO will provide the Assessment Team access to a copy of the register. (Item 71-17 remains OPEN)  
(INFORMATION ITEM)

Item 90-3 - Auxiliary Building Access Shaft Soldier Piles.

J. Fisher reported that the FCR describing remedial action for extension of the two short soldier piles in each access shaft to the top of the buttress access shaft footing has been issued. (Item 89-10 remains OPEN) (INFORMATION ITEM)

New Items

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Midland Plant, Units 1 & 2  
Consumers Power Company

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Item 90-4 - US Testing Requirements for Concrete Testing.

With respect to an NCR written against the testing of sand at the concrete batch plant, L. Rouen asked if Bechtel is responsible for directing the concrete testing activities of US Testing. J. Fisher responded that concrete testing activities of US Testing are governed by the engineering specification for concrete placement and testing. The type, number and timing of the tests are dictated by the specifications, not Bechtel field supervision. Bechtel field supervision may request additional tests as needed, but US Testing must meet testing requirements contained in the appropriate specifications as a minimum. (CLOSED ITEM)

Item 90-5 - Concrete Testing NCR.

With respect to an NCR written because a concrete air entrainment test was taken at the improper location, L. Rouen asked for details on the MPQAD activity at the time. J. McMaster replied that the QC inspector was overlooking the US Testing effort. The inspector did consult the applicable specifications but did not immediately locate the reference to location of testing. Subsequently, it was verified that the test should have been taken at the placement location, not at the truck discharge. (NIR # 26 remains OPEN) (CLOSED ITEM)

Item 90-6 - SWPS Duct Bank Cracks.

E. Cviki reported that cracks had been found in the most easterly duct bank near the SWPS north wall. The crack consultant, CTL, will be reviewing the cracks. D. Bernie requested that the Assessment Team be provided with a copy of the CTL summary report once it is issued. E. Cviki will respond. (OPEN ITEM)

Item 90-7 - Upper Leveling and Bearing Plate Assembly Welds.

B. Metros asked why the smaller weld recently approved for use on the upper leveling and bearing plate assemblies is not being used. J. Fisher will respond. (OPEN ITEM)

Item 90-8 - Contingency Jacking.

R. Sevo asked which procedure will be used if contingency jacking is required due to differential movement at the Control Tower/Turbine Building interface. J. Fisher responded that if differential movement between these structures exceeds 0.5 in. the Subcontractor's procedure for pier jacking will be implemented. (CLOSED ITEM)



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Consumers Power Company

Held at Midland Site  
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Item 90-9 - BWST Ring Beam Additions at the Valve Pit.

D. Zito discussed the portion of the ring beam addition inside both of the BWST valve pits. Mr. Zito asked what construction techniques will be used to allow concrete vibrator access and to assure there are no gaps where the top of the ring beam addition will interface with the existing valve pit roof slab. J. Fisher will respond. (OPEN ITEM)

Item 90-10 - E5 Grillage Bearing Plate Smoothness NCR.

W. Kilker asked for a clarification on the nonconforming condition and disposition on an NCR written against the surface condition of two bearing plates at a E5 grillage beam jacking location. The NCR appeared to contain less specific information on the non-conforming condition than is normally presented and the disposition was such that the need for a smoothness criteria was left in-doubt. E. Cvikel will verify the details of the resolution of this NCR and respond . (OPEN ITEM)

Response Items

No response items were discussed.



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

Held at Midland Site  
Midland, Michigan  
June 5, 1984

Present For:

Consumers Power

G. Murray  
J. Schaub

Bechtel

J. Fisher  
E. Cvikl  
J. Kelleher

MPQAD

R. Sevo  
J. McMaster

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 90-11 - Auxiliary Building Underpinning Activities.

Reinforcing steel installation was completed for pier Kc8.

Drypacking of the upper leveling plate for the X jack location was completed at the E5 grillage.

Placement of the last lift of concrete for the CT 3/10 piers is scheduled for tomorrow.

(INFORMATION ITEM)

Item 90-12 - SWPS Underpinning Activities.

J. Fisher reported that installation of the lower level wale in the vicinity of the SWPS northeast corner is scheduled to begin tomorrow. (INFORMATION ITEM)

Item 90-13 - Incorporation of "One Time Deviation" FCRs.

J. Kelleher discussed incorporation of "one time deviation" FCRs onto the drawings. Incorporation of previous "one time deviation" FCRs is in process. This work is being accomplished in accordance with administrative guidelines. Field and project engineering documents control procedures are presently being updated to provide guidelines for incorporating this type of FCR in the future. These updated procedures will contain the criteria for determining whether an FCR will be incorporated directly onto the drawing or incorporated by reference with a brief description. (Item 89-7 remains OPEN) (INFORMATION ITEM)

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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
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Item 90-14 - Ring Beam Addition in Valve Pit.

J. Fisher discussed the original planned method of concrete placement for the portion of the ring beam addition inside the valve pit at each BWST. After placing concrete in the bottom portion of the beam addition, the Contractor planned to grout the remaining portion through holes drilled in the valve pit roof slab, but Engineering did not approve the use of the grout. As a result, the Contractor is evaluating alternate placement methods. (Item 90-9 remains OPEN) (INFORMATION ITEM)

Item 90-15 - SWPS Duct Bank Cracks.

E. Cviki reported that the crack consultant, CTL, will begin their evaluation of the duct bank crack at the SWPS north wall. Their preliminary investigation does not indicate that the crack resulted from differential settlement between the SWPS and the duct bank. The actual cause is still under investigation. (Item 90-6 remains OPEN) (INFORMATION ITEM)

New Items

Item 90-16 - UAT Lateral Wellpoints.

J. Fisher reported that water level readings taken at piezometer BB-2 indicate that the perched groundwater level beneath the control tower is remaining stable at El. 584' ±. As a result, use of the UAT lateral wellpoints has been discontinued. (INFORMATION ITEM)

Response Item

Item 90-17 - E5 Grillage Bearing Plate Smoothness NCR.

E. Cviki responded to the Assessment Team question concerning clarification of an NCR written against the surface condition of two bearing plates at the E5 grillages. Mr. Cviki stated that Resident Engineering had performed a visual inspection of the plates prior to dispositioning the NCR. The visual inspection determined that although the smoothness criteria for the bearing surfaces had not been met, the actual surface condition was capable of satisfying the loading requirements. The NCR disposition will be revised to reflect results of the visual inspection performed by Resident Engineering. (CLOSES ITEM 90-10)

Item 90-18 - Computerized Civil Drawing Register.

The Assessment Team has completed a review of the computerized drawing register which is being implemented for control and maintenance of Contractor and Sub-contractor drawings. The register information for Contractor drawings includes drawing number, title, revision number, attachment information and distribution schedules. This same information for vendor drawings with the exception of

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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
Midland, Michigan  
June 5, 1984

distribution data is contained on the register. Central Document Control updates the register on a daily basis ensuring that the latest document data is available. The Assessment Team believes that implementation of the computerized register will serve as a useful tool for control and maintenance of the controlled documents on site. Implementation of this system site wide will ensure a more uniform approach for controlling distribution and maintaining construction drawings. (CLOSES ITEM 71-17)

Item 90-19 - Auxiliary Building Access Shaft Soldier Piles.

The Assessment Team has reviewed the FCR which contains the redesign for extension of the two short soldier piles in each access shaft. The piles will be extended to the top of the buttress access shaft footing by welding a wide flange section to the front of the existing soldier piles as required. Once the wide flange sections have been added, lagging and backpacking will be installed in accordance with the design requirements. The Assessment Team concurs with the remedial action taken to extend the soldier piles. (CLOSES ITEM 89-10)

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

Held at Midland Site  
Midland, Michigan  
June 6, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
E. Cvikl  
J. Kelleher

MPQAD

R. Sevo  
J. McMaster

Stone & Webster

D. Benvie  
D. Zito

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 90-20 - Auxiliary Building Underpinning Activities.

Extension of the two short soldier piles in the west access shaft to the top of the buttress access shaft footing has begun.

Regrouting of the Kc5 upper leveling plate was completed.

Placement of the pier Kc8 concrete is scheduled for today.

(INFORMATION ITEM)

Item 90-21 - BWST Ring Beam Addition in Valve Pit.

J. Fisher discussed proposed methods which are being evaluated to place concrete for the portion of the ring beam addition within the valve pit at each BWST. The Contractor has proposed that a pea gravel concrete mix be used to ease placement in this confined area of the ring beam addition. Another modification being considered includes drilling additional holes in the valve pit roof slab to increase access for the concrete vibrators into the placement area. (Item 90-9 remains OPEN) (INFORMATION ITEM)

New Items

Item 90-22 - Diesel Generator Building Crack Evaluation.

G. Murray reported that a supplemental engineering survey requested by the NRC staff to evaluate cracking in the diesel generator building will begin in the near future. (INFORMATION ITEM)

Item 90-23 - Excavation Slopes for the Unit 2 HVAC Foundation Pad.

D. Benvie discussed the excavation for the Unit 2 HVAC foundation pad. One of the excavation slopes had been excavated at or near vertical for its entire height of 8 to 10 ft. It was noted that the underpinning subcontractors crane operating within 5 ft. of the top of the vertical slope may be adding surcharge loading to the soil which could cause soil sloughing and possibly

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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
Midland, Michigan  
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damage the installed duct line and concrete formwork. Additionally, partial undermining of the vertical soil slope and the proximity of the duct bank to the slope will prevent proper compaction of the backfill during placement. Mr. Benvie asked the Contractor to evaluate these conditions. J. Fisher will respond. (OPEN ITEM)

Item 90-24 - MPQAD Staffing for Underpinning.

J. Oliveira noted that the Assessment Team had learned from Bechtel and MPQAD that the attrition rate for Remedial Soils QA/QC staff has increased. Mr. Oliveira asked if consideration is being given to consolidating QC hold points in response to the decreased staffing levels. It was stated that there are no plans to consolidate QC hold points. MPQAD is in the process of reassigning and training MPQAD Balance of Plant personnel to replace Remedial Soils QA/QC inspectors who have left. Additionally, Bechtel is evaluating the schedule for underpinning work activities in order to minimize possible impact. (CLOSED ITEM)

Item 90-25 - Installation of Contingency Jacks.

J. Fisher reported that installation of contingency jacks at the interface of the turbine building and control tower is scheduled to begin within the next week. The jacks will only be used if differential settlement between the control tower and turbine building exceeds 0.5 in. (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  
June 7, 1984

Present For:

Consumers Power

G. Murray

Bechtel

J. Fisher  
E. Cvikl  
J. Kelleher

MPQAD

R. Sevo  
J. McMaster

Stone & Webster

D. Benvie  
D. Zito

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 90-26 - Auxiliary Building Underpinning Activities.

Placement of concrete for pier Kc8 began yesterday. Due to a power outage, concrete placement was only completed to El. 592.75. As a result a cold-joint was formed for the pier shaft. The remaining concrete will be placed tomorrow.

Grouting of all 3 upper leveling plates at each of the E/W5 grillages was completed.

Load transfer for Kc5 is scheduled for tomorrow.

(INFORMATION ITEM)

Item 90-27 - SWPS Underpinning Activities.

J. Fisher reported that installation of the lower level bracing at the northeast corner of the SWPS has begun. (INFORMATION ITEM)

Item 90-28 - SWPS Duct Bank Cracks.

J. Fisher reported that a conditional release had been issued to allow chipping of the duct bank concrete in the area of the cracks. The chipping is being done to allow an evaluation of the cracks. It is also planned to excavate in a localized area beneath the duct bank/SWPS north wall interface to provide additional information. (Item 90-6 remains OPEN) (INFORMATION ITEM)

New Items

Item 90-29 - Weekly Report # 89.

The text of Weekly Report # 89 was reviewed. It was determined that all open items had been previously identified. (INFORMATION ITEM)



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

Held at Midland Site  
Midland, Michigan  
June 7, 1984

Response Items

Item 90-30 - Excavation Slopes for the Unit 2 HVAC Foundation Pad.

J. Fisher responded to the Assessment Team question concerning vertical soil-slopes for the HVAC foundation pad excavation. Access of the underpinning subcontractors' crane to the excavation slopes has been restricted in order to prevent surcharge loading of the soil. The slope will be layed back and braced as needed to ensure its' stability. Undermined areas will be removed during layback of the slope to provide access for compact-ion equipment during backfilling. The Assessment Team concurs with this course of action. (CLOSES ITEM 90-23)

Item 90-31 - Documentenation of Buttress Access Shaft Spall Repair.

E. Cvikl responded to the Assessment Team question concerning documenta-tion of the Safety Concern Evaluation Report (SCER) content associated with concrete spalling on the Buttress Access Shaft wall. The SCER re-quired that the torque of the rockbolts for the Level C bearing plate closest to the spall area be verified and the concrete within the spalled area be removed. Since this structure is non Q, MPQAD documentation is not required. However, a field engineers report was prepared to document the results of the rock bolt load verification. In addition, a concrete drill permit was prepared to allow removal of the concrete in the spalled area. The field engineer's report and the concrete drill permit have been attached to the SCER as permanent documentation of the work. The Assessment Team believes that the SCER content and recommendations have been adequately documented. (CLOSES ITEM 88-25)

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

Held at Midland Site  
Midland, Michigan  
June 8, 1984

Present For:

Consumers Power

G. Murray  
R. Wheeler

Bechtel

J. Fisher  
E. Cvikl  
J. Kelleher

MPQAD

R. Sevo  
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 90-32 - Auxiliary Building Underpinning Activities.

Concrete placement was completed for piers CT 3/10.

Installation of jacks and jackstands was completed for pier Kc5.

(INFORMATION ITEM)

New Items

Item 90-33 - SWPS Phase II Cofferdam Subgrade.

D. Benvie discussed excavation of the SWPS Phase II cofferdam. It was noted that if over-excavation is required below design subgrade for the pipe bedding, additional bracing and/or layback of the excavation slopes will be required. Mr. Benvie asked if a visual inspection of the soldier pile sheeted pit excavations is planned in order to make a preliminary evaluation as to the acceptability of the subgrade at this elevation. E. Cvikl responded that there is no formal requirements to inspect the sheeted pit excavations. However, visual examination of the sheeted pits will be performed to assist Resident Engineering in their evaluation of the pipe bedding subgrade for acceptability. (CLOSED ITEM)

Item 90-34 - MPQAD Organization Chart.

J. Oliveira requested a copy of the MPQAD organization chart showing a schedule breakdown with staffing level for the work shifts. J. McMaster will respond. (OPEN ITEM)

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Midland Plant, Units 1 & 2  
Consumers Power Company

Held at Midland Site  
Midland, Michigan  
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Item 90-35 - Concrete Aggregate Testing.

P. Majeski asked what concrete aggregate testing data is required prior to batching of concrete. J. Kelleher responded that the aggregate moisture content data is required to determine proportions of the concrete batch mix. It was noted that the moisture content data sheet for concrete batched on 5/28/84 which was placed for the CT 3/10 pier bells had not been signed off prior to concrete batching. Mr. Majeski asked MPQAD to determine if the moisture test results had been adequately reviewed prior to concrete batching. J. McMaster will respond. (OPEN ITEM)

Response Items

No response items were addressed.