



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 31 1980

Docket Nos.: 50-329/330

APPLICANT: Consumers Power Company

FACILITY: Midland Plant, Units 1 & 2

SUBJECT: SUMMARY OF FEBRUARY 27 & 28, 1980 MEETING AND SITE TOUR WITH CONSULTANTS TO REVIEW SOIL SETTLEMENT

On February 27 and 28, 1980, the NRC staff and three organizations recently acquired to support the staff safety review of geotechnical and interfacing matters, met with Consumers Power Company (the applicant), Bechtel and Bechtel consultants at the site for Midland Plant, Units 1 & 2. The three organizations supporting the staff review are the U. S. Army Corps of Engineers, Energy Technology Engineering Center, and U. S. Naval Surface Weapons Center. The purpose of the visit was to review and observe site backfill deficiencies and effects. This was the initial visit for the staff's consultants and the meeting was held to assist these consultants with their review of existing documentation on the background, remedial work and present status of this matter. Meeting attendees are listed in Enclosure 1.

The information reviewed at this meeting is contained in Amendment 72 to the Midland FSAR, December 19, 1979, for which referenced material is forwarded in two volumes by the applicant's letter of February 11, 1980. One of the volumes entitled "10 CFR 50.55(e), Interim Reports, Settlement of Diesel Generator Foundations and Building," consists of the 10 CFR 50.55(e) reports sent by the applicant to the staff's Office of Inspection and Enforcement from November 7, 1978 through September 5, 1979. The other volume, entitled "Responses to NRC Requests Regarding Plant Fill," consists of the applicant's 10 CFR 50.54(f) responses to the Office of Nuclear Reactor Regulation submitted April 24, 1979 through November 13, 1979. These documents represent the applicant's reports upon which the staff's order of December 6, 1979 requiring modification of the construction permits is based. The meeting also included a preview of information to be contained in Revision 5 to the applicant's responses in the latter volume intended for submittal about the end of February, 1980. Revision 5 will include responses to the staff's supplemental requests of November 19, 1979. Only information not contained in these documents is included in this meeting summary.

In opening remarks, Mr. G. Keeley announced that Consumers Power Company has elected to defer all remedial work on inadequately supported structures until acceptance of the proposed work is received from the staff. This action is

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voluntary on the applicant's part since the effective date for the staff's December 6, 1979 order is to be established by the Hearing Board pursuant to 10 CFR 2.204. The basis for this decision was said to be to preclude potential loss of revenue associated with expenditures for which staff approval has not been granted. The staff observed that this was a prudent decision, particularly in view of the significant slip in construction completion projected by Bechtel and currently under review by the applicant and due to other causes, principally the TMI-2 accident.

Presentations were also given by Bechtel consultants. Mr. C. H. Gould described the procedure for placement of caissons beneath the electrical penetration area (i.e., wing walls) of the Auxiliary Building and beneath the Feedwater Isolation Valve Pit area. Mr. M. T. Davisson described the procedure for placement of piles to support the northern portion of the Service Water Building. Dr. A. J. Hendron, Jr. reviewed the preloading program completed for the Diesel Generator Building and discussed why the preload option was elected in lieu of other possible corrective alternatives. Dr. R. B. Peck summarized the recommendations of the Bechtel consultants and emphasized that the preloading option is considered to eliminate the need for any further testing or measurements as a basis for establishing confidence for future settlement potential of the Diesel Generator Building. A summary of these discussions by the Bechtel consultants will be submitted as an amendment to the FSAR.

During the meeting, references were made to certain information and reports which have not been made available to the NRR staff, although some of these have been examined by I&E through the audit mechanism. Examples include:

1. Some of the figures listed in the drawing summary for the interim reports to MCAR #24 which are not included with the compilation of reports forwarded by the applicant's letter of February 11, 1980, even after noted figure replacements and redundancy are taken into account.
2. Installation details of each piezometer used to monitor pore water pressures during the preload program (e.g., type and actual elevations of installed piezometers, backfill materials and zone thickness).
3. Reports, meeting summaries, or other written communications with or by consultants recommending or supporting remedial measures for structures and utilities located upon or in questionable soils.
4. Reports of the evaluation (e.g., bases, procedure, execution and results) of the initial qualification and subsequent requalification of compaction equipment.
5. The report "Tank Farm Investigation; Midland Units 1 & 2," issued October, 1979.

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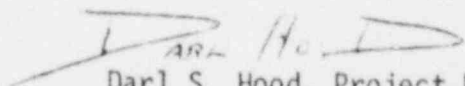
The staff noted that such documents as above are needed by its consultants for their independent assessment of the adequacy of the proposed remedial measures and requested that these be made publicly available. The applicant indicated a reluctance to this end, and noted that these were available through the I&E audit mechanism. The staff will issue a formal request for these documents. The staff also noted that the boring logs provided in Appendix 2A of the FSAR did not reflect those borings associated with piezometer installation; the applicant replied that these would be added.

Site tours were provided in groups based upon the following engineering disciplines: (1) Geotechnical, (2) Structural, (3) Mechanical, and (4) Hydrologic.

During the tour the Corps noted that except for the use of temporary blocks, the service water pipe would otherwise be in direct contact with the base of the penetration through the northern wall of the Service Water Building. It is postulated that this results from the more rapid settlement of the buried pipe relative to the building's cantilevered settlement. The Corps emphasized that special attention should be given this area to avoid stressing the pipe at the penetration, particularly during pile driving and after attachment of the piles to the structure.

The staff noted that the presentation by Mr. C. H. Gould included the specification of some quantitative criteria to be applied during the remedial action for the Auxiliary Building. The staff asked if similar criteria were specified by the other Bechtel consultants, but was advised that these other criteria were more of a qualitative, subjective nature.

The staff also requested the applicant to submit a description of the services to be performed by consultants R. B. Peck, A. J. Hendron, Jr., C. H. Gould and M. T. Davisson through the completion of construction on the remaining remedial fixes. This description should identify the extent of continued involvement of the consultants in overseeing construction operations and in evaluating the effectiveness of completed fixes for which they have provided major design input.



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Enclosures:

1. Attendees
2. Agenda

cc w/enclosures:

See next page.

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ENCLOSURE 1

ATTENDEES

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Karl Wiedner
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Al Boos
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Walter Ferris

Consultants

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C. H. Gould
M. T. Davisson

NRC

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J. Kane
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US Corp Of Engineers

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J. Norton
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ETEC

W. P. Chen
J. Brammer

US Navy Weapons Center

P. Huang
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ENCLOSURE 2

AGENDA FOR

MEETING WITH NRC ON MIDLAND PLANT FILL STATUS AND RESOLUTION

February 27 & 28, 1980

Midland Site

- 1.0 INTRODUCTION G. Keeley
- 2.0 PRESENT STATUS OF SITE INVESTIGATIONS T. Cooke
- 2.1 Meetings with Consultants and Options Discussed (Historical)
- 2.2 Investigative Program
- A. Boring Program
- B. Test Pits
- C. Crack Monitoring and Strain Gauges
- D. Utilities
- 2.3 Settlement
- A. Area Noted
- B. Preload
- C. Instrumentation
- 3.0 WORK ACTIVITY UPDATE J. Wanzeck
- 3.1 Summary of work activities and settlement surveys for all Category I structures and facilities founded partially or totally on fill
- 4.0 REMEDIAL WORK IN PROGRESS OR PLANNED (Q4, 12, 27, 31, 33 & 35) S. Afifi
- 4.1 Diesel Generator Structures
- 4.2 Service Water Pump Structures
- 4.3 Tank Farm
- 4.4 Diesel Oil Tanks
- 4.5 Underground Facilities
- 4.6 Auxiliary Building and FW Isolation Valve Pits
- 4.7 Liquefaction Potential
- 5.0 EVALUATION OF PIPING (Q16, 17, 18, 19 & 20) D. Riat
- 6.0 DEWATERING (Q24) B. Paris
- 7.0 ANALYTICAL INVESTIGATION B. Dhar
- 7.1 Structural Investigation (Q14, 26, 28, 29, 30 & 34)
- 7.2 Seismic Analysis (Q25)
- 7.3 Structural Adequacy with Respect to PSAR, FSAR, etc.
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- 2/27/80
2/28/80
- 8.0 SITE TOUR All
- 9.0 CONSULTANTS SUMMARY Peck/Hendron/
Gould/Davisson
- 10.0 DISCUSSION All