



Consumers
Power
Company

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Washington, DC 20555



MIDLAND PROJECT
ACTIVITIES FOR THE RESOLUTION OF OUTSTANDING ISSUES REGARDING
THE MIDLAND SOILS HEARINGS
FIJE: 0485.16, B2.5.2 UFI: 42*05*22*01, 00234S, 71*01 SERIAL: 11625

This letter is submitted to document the telephone conversation of February 27, 1981 between myself, R H Vollmer, and members of both our staffs. The call addressed several matters relating to the Midland soils hearings. In order to put the items discussed in context, a brief background summary is presented below.

On August 22, 1978 Consumers Power Company verbally notified the Region III Resident Inspector that the partially completed diesel generator building was experiencing more settlement than had been postulated. This was later determined to be due to inadequate compaction of backfill. A 50.55(e) report was initially issued on September 29, 1978 and further interim 50.55(e) reports were issued until the last report of February 7, 1980, after which subsequent information was supplied by 50.54(f) responses.

On March 21, 1979 the NRC issued the initial 50.54(f) request regarding plant fill and subsequent requests were issued. Answers to most of these 50.54(f) questions have been forwarded with the latest being Amendment 88 (Rev 11 to the 50.54(f) responses) dated March 16, 1981. On December 6, 1979 an Order Modifying Construction Permits No CPPR-81 and CPPR-82 was issued by the NRC. A principal reason this order was issued was due to the Staff's erroneous assumption that remedial actions, other than the surcharging of the diesel generator building, were proceeding. On December 26, 1979 Consumers Power Company requested a hearing in accordance with Part V of the Order.

On October 14, 1980 a letter from R L Tedesco to us indicated that one of the open items associated with the review of our operating licenses for Midland Units 1 and 2 was the establishment of additional seismological input parameters against which to review the plant structures and equipment. The letter stated that consideration of this open item would also be introduced into the review of the remedial actions associated with the soils settlement matter which was the subject of the December 6, 1979 Order Modifying Construction Permits.

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Since our initial notification to the NRC about the soils problem, there have been many meetings and telephone conversations to discuss the proposed remedial actions and the responses to questions by the NRC and their consultants. In addition, depositions have been taken by Consumers and the NRC.

During all the above activities it has become apparent that there are some areas of disagreement between the Staff and its consultants and Consumers and its consultants. In addition, the October 14, 1980 letter from R L Tedesco on a seismic response spectra has placed us in the position of having to evaluate our remedial fixes against an unknown, but possibly higher margin, since the site specific response spectra issue could result in structural loads larger than those resulting from an SSE zero period acceleration of 0.12g and modified Housner spectra which are the PSAR and FSAR design basis.

On February 27, 1981 I initiated the referenced call to R H Vollmer and other Staff personnel to inform the Staff of new developments. We hope these actions will help resolve certain issues that to date have been in contention with the Staff. We also hope that the Staff will look favorably on our requests to pursue with your concurrence certain activities which if not undertaken shortly will have a significant adverse schedule impact.

1. BORINGS

While we still disagree with the need to take additional borings and run tests, we will take borings as specified in the January 8, 1981 letter to us from R L Tedesco. Consolidation tests by an independent laboratory will be run on soils samples taken near the diesel generator area to obtain pre-consolidation pressures, and comparisons will be made to the calculated pre-stresses to which the soils in the areas of the samples were subjected during the surcharge program. An evaluation of these tests and results will be undertaken to assess the level of uncertainty inherent in these data. Shear strength tests will be run on soils samples taken in the power block area to determine factors of safety for bearing capacity. Shear strength tests will also be run on soils samples taken from dike borings to substantiate slope stability. We will keep the Staff informed of all the above activities so that they can witness the activities, if desired. The results of the test program will be submitted and reviewed with the Staff.

2. SERVICE WATER BUILDING AND ELECTRICAL PENETRATION AREAS

The October 14, 1980 R L Tedesco letter on seismic, accelerated the completion of a margin analysis of the underpinning systems proposed as remedial actions. While all structural analyses have shown the fixes to be adequate for the plant seismic design basis of .12g, there was concern that a seismic margin analysis based on the currently undefined site specific response spectra would introduce new potential areas of contention with the Staff. As a result we have decided to change from a pile support design for the overhang portion of the service water building to an underpinning concept involving a full length wall under the overhang portion with the wall extending into the till. We are confident that this will provide sufficient margin for any reasonable resolution of the site

specific response spectra issue. The conceptual design for this approach will be available to allow discussions with the Staff in April 1981.

The remedial action under the electrical penetration area will remain essentially the same as has been described both in discussions and in answers to Staff questions, except that more caissons and some enlargement of the base of the pier under the valve pit will be utilized in order to obtain additional margin.

3. PERMANENT PLANT DEWATERING

Although it is our legal opinion that we can implement remedial actions at our own risk without Staff concurrence, we have chosen not to proceed without their knowledge and concurrence. The single pacing activity for the entire sequence of installing the remedial underpinnings is the completion of the permanent plant dewatering system. The first phase of this activity is the installation of a few back-up wells commencing in May of 1981. A large amount of information on the permanent plant dewatering system has been provided to the Staff. Installation of back-up wells along the service water and circulating water buildings will facilitate draw down and recharge rate tests, verify the design of the remainder of the permanent plant dewatering system, provide dewatering settlement data, and facilitate preparation for installation of the wall under the overhang portion of the service water structure.

Since the wells can be abandoned and grouted, we do not believe it is necessary to consider the installation of wells as an irrevocable commitment.

We request that the Staff concur with our position and that we so notify the Soils Licensing Board.

4. SITE SPECIFIC SEISMIC CRITERIA

We have had several discussions with the Staff on this subject, and as previously requested by them we supplied them with the Final Report Part I "Response Spectra - Original Ground Surface" and Part III "Seismic Hazard Analysis". Part II entitled "Response Spectra For Top of Fill and Theoretical studies on possible Ground Motion Amplification Through Fill under the Diesel Generator Building" will be furnished by April 1981. As already scheduled, we will be meeting with the Staff on these issues on April 16, 1981.

Our objective is not only to resolve the site specific response spectra with the Staff but also to recognize and schedule with the Staff management the total sequence of seismic margin analysis activities that are currently required in the operating licensing process.

We are also petitioning the soils hearing Licensing Board to remove the seismic issue from that hearing and urge the Staff to consider our motion and join with us if possible.

In prior conversations with Mr Vollmer on the general topic of resolution of issues, it was anticipated that the Staff could support an expedited review of the underpinning designs. Based on the scheduled submittals of Attachment 1, we are hopeful that as much staff review of these materials as possible can be accomplished prior to the hearing while still reflecting the limitation of Staff resources. We will be in contact with the NRC's Midland project manager to pursue in detail the additional submittals and meetings referenced in this letter.

James W. Cook

JWC/GSK/cr

CC: RJCook, Midland Resident Inspector
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ATTACHMENT 1
NEAR TERM SCHEDULE MILESTONES FOR
ACTIVITIES RELATED TO SOILS HEARINGS

A. SEISMIC DESIGN CRITERIA

1. Submit Weston Report Part I and III to NRC. Completed and provided to NRC on 3/3/81.
2. Submit Part II in April 1981.
3. Meet with NRC Staff in April to discuss resolution of issues. Also discuss schedule for resolution of these issues with respect to Operating License.

B. PERMANENT PLANT DEWATERING

1. Drill and develop back-up wells along service water and circulating water pump house 5/1/81 start.
2. Drill and development remainder of permanent plant dewatering wells. 11/1/81 start.

C. AUXILIARY BUILDING

1. Meet with NRC on conceptual design April 1981.
2. Complete conceptual design 6/1/81.
3. Complete final design 8/1/81.

NOTE: Construction activities are scheduled to the following milestones:

Award subcontract 1/1/82; Mobilize 4/1/82; Start Excavation and installation 6/1/82; Complete April 1983.

D. SERVICE WATER PUMP STRUCTURE

1. Meet with NRC on conceptual design April 1981.
2. Complete conceptual design April 1981.
3. Complete design 6/15/81.

NOTE: Construction activities are scheduled to the following milestones:

Award subcontract 1/1/82; Mobilize 9/1/82; Start Excavation and installation 11/1/82; Complete May 1983.

E. UNDERGROUND UTILITIES

Meet with NRC in April 1981 on results of discussions with Consultants and discuss schedule for completion of investigation.

F. BORINGS

1. Issue specification and retain subcontractor 3/23/81.
2. Commence Borings week of 3/23/81.
3. Commence Lab Testing week of 3/30/81.
4. Complete Borings 5/1/81.
5. Complete Lab Testing 6/8/81.
6. Periodically review results of detailed program 3/23/81 to 6/8/81, with NRC.

G. BORATED WATER STORAGE TANKS

1. Meet with NRC on remedial actions April 1981.