



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

APR 7 1982

NOTE TO: Dave Fischer

FROM: Darl Hood

During our telephone discussion today regarding the upcoming ACRS subcommittee meeting for April 29 to discuss Midland soils matters, we agreed that the discussions would focus on the remedy rather than the cause of the soils problem. You noted, however, that some of the members did want to know more about this, and suggested that some background documents on the cause of the soils problem would be helpful.

The NRC's finding as to cause is indicated in our Order on Modification issued December 6, 1979 to be due to a breakdown in quality assurance with respect to soils activities. The basis for our finding of a breakdown in QA is explained in great detail in the enclosed testimony filed June 8, 1981. The testimony of Eugene Gallagher, which includes as attachments the Regions investigation reports (78-20 and 78-12), identifies the many QA deficiencies involved, from which we earlier concluded that the term "breakdown" is appropriate. The applicant subsequently agreed, by joint stipulation with the staff, not to contest the staff's finding that a QA breakdown in the soils areas existed as of December 6, 1979. The stipulation went on to note that changes had been made to the organization and procedures, and that the Staff now finds these areas to be acceptable.

Also enclosed is "Nuclear Regulatory Commission Staff's Proposed Findings of Fact and Conclusions of Law", filed December 30, 1981. This was filed December 30, 1981 in support of a partial initial decision to be issued by the Licensing Board only on the quality assurance aspects of the hearing. The document was updated March 26, 1982 by the enclosed "NRC Staff Supplemental Findings of Fact and Conclusions of Law." These two documents are provided in response to your request for a concise summary of the QA hearing background. At this time, further QA matters remain to be heard in the hearing and the exact date for the partial initial decision is somewhat uncertain.

From your review of these documents, I believe you will agree with me that to discuss the QA aspects of the soils problems with the subcommittee on April 29, 1982 would probably consume most of that day's session. Moreover, since these matters have now been corrected to our satisfaction, such discussion would be less productive than discussions on the technical aspects of the remedial measures for affected structures and piping. Should the subcommittee desire discussions of QA, I would ask for a separate session and would ask for Region III support.

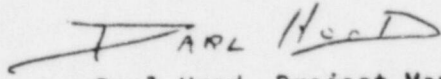
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ATTACHMENT 3

Dave Fischer

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If there are other documents for which the subcommittee has interest, please do not hesitate to call me at 492-8474.

A handwritten signature in dark ink, appearing to read "Darl Hood". The signature is stylized with a large, sweeping initial "D" and a horizontal line extending to the left.

Darl Hood, Project Manager  
Licensing Branch #4  
Division of Licensing

Enclosures: (3)

LIST OF ATTACHMENTS TO NRC STAFF TESTIMONY OF  
MR. EUGENE GALLAGHER

1. September 29, 1978: Initial 10 CFR 50.55(e) Report from Consumers Power Co.
- > 2. November 17, 1978: NRC Inspection Report 78-12.
3. January 12, 1979: Summary of December 4, 1978 meeting.
4. February 23, 1979: NRC Presentation of Preliminary Investigation Findings of the Settlement of the Diesel Generator Building.
5. March 9, 1979: Consumers Discussion of NRC Inspection Facts Resulting From NRC Investigation of the diesel generator building.
6. March 21, 1979: NRC 10 CFR 50.54(f) Request Regarding Plant Fill.
- > 7. March 22, 1979: NRC Inspection Report 78-20.
8. April 9, 1979: NRC Inspection Report 79-06.
9. April 24, 1979: Consumers Response to 10 CFR 50.54(f), Question 1.
10. June 6, 1979: NRC Inspection Report 79-10.
11. August 10, 1979: Bechtel Review of U.S. Testing Co. Field & Laboratory Tests on Soils.
12. October 1, 1979: NRC Inspection Report 79-19.
13. October 16, 1979: Summary of July 18, 1979 Meeting.
14. November 13, 1979: Consumers Response to 10 CFR 50.54(f), Question 20.
15. December 6, 1979: Order Modifying Construction Permits.
16. April 16, 1980: Consumers Answer to Notice of Hearing.
17. Professional Qualifications of Eugene J. Gallagher.



Stamiris' Contention 1 reads as follows:

Consumers Power Company statements and responses to NRC regarding soil settlement issues reflect a less than complete and candid dedication to providing information relevant to health and safety standards with respect to resolving the soil settlement problems, as seen in:

- a) the material false statement in the FSAR (Order of Modification, Appendix B);
- b) the failure to provide information resolving geologic classification of the site which is pertinent to the seismic design input on soil settlement issues (Responses to FSAR Questions 361.4, 361.5, 361.7 and 362.9);
- d) the failure to provide adequate acceptance criteria for remedial actions in response to 10 CFR §50.54(f) requests (as set forth in part II of the Order of Modification);

and this managerial attitude necessitates stricter than usual regulatory supervision (ALAB-106) to assure appropriate implementation of the remedial steps required by the Order Modifying Construction Permits, dated December 6, 1979.

April 20, 1981 Supplement to Contention 1

Examples of CPCo. reluctance to provide requested information

- 1. 3/31/80 NRC meeting notation of Applicant's reluctance to provide NRC consultants with requested information.
- 2. Vol. III, tab 65 50-54f, 8/6/79 meeting, attitude that "needlessly conservative decisions may be formulated on the 'what if' type questions" by the NRC on dewatering.
- 3. The 11/24/80 S.A.L.P. assessment on CPCo - NRR interface as presented by D. Hood in the following statements regarding soil settlement issues:

"A big contributor to the inability to make meaningful progress in this matter is the quality of responses gotten. We have set some kind of record on the number of questions re-asked, which speaks poorly for CPCo-NRR interface. ...The bottomline is there seems to be a lack of appreciation or support of Staff review necessities and a tendency to push ahead despite the lack of proper assurances."

4. The perfunctory manner in which CPCo. deponents answered questions. (I will tabulate examples from the depositions I attended.)

Examples of information withheld or incorrectly given:

5. The failure of CPCo. to discuss the Administration Building settlement problem with the NRC, as they did with their consultants, in the early meetings on the DGB settlement.
6. The false FSAR statements beyond the one cited as a "material false statement" in the Dec. 6 Order, as discussed in the 4/3/79 Keppler-Thornburg memo, and the 6/13/79 Thornburg - Thompson memo.

Stamiris Contention 2 reads as follows:

Consumers Power Company's financial and time schedule pressures have directly and adversely affected resolution of soil settlement issues, which constitutes a compromise of applicable health and safety regulations as demonstrated by:

- a) the admission (in response to §50.54(f) question #1 requesting identification of deficiencies which contributed to soil settlement problems) that the FSAR was submitted early due to forecasted OL intervention, before some of the material required to be included was available;



- b) the choice of remedial actions being based in part on expediency, as noted in Consumers Power Company consultant R. B. Peck's statement of 8-10-79;
- c) the practice of substituting materials for those originally specified for "commercial reasons" (NCR QF203) or expediency, as in the use of concrete in electrical duct banks (p. 23 Keppler Report)\*;
- d) continued work on the diesel generator building while unresolved safety issues existed, which precluded thorough consideration of Option 2 - Removal and Replacement Plan; and
- e) the failure to freely comply with NRC testing requests to further evaluate soil settlements remediation, inasmuch as such programs are not allowed time for in the new completion schedule presented July 29, 1980.

April 20, 1981 Supplement to Contention 2

Further examples of the effect of financial and time pressures on soil settlement issues:

Examples	Effect on soil settlement issues
1. 11/7/78 Bechtel action item: "proceed with preparations for preload as rapidly as possible"	1. Root causes not adeq. investigated. Organizational deficiencies not eliminated prior to proceeding with remediation
2. 11/7/78 decision to fill pond "immediately, because the amount of river water available for filling is restricted"	2. Affected piezometric measurements during preload
3. 11/7/78 "5 month period is available in the schedule for preloading"	3. The surcharge was removed at the end of this 5 months despite lack of NRC satisfaction that secondary consolidation was assured

\* March 22, 1979 Keppler Investigation Report conducted by Region III, Dec. 78-Jan. 79.

4. Failure to grout gaps prior to cutting of duct banks, failure to cut condensate lines when first suggested, failure to break up mudmat at DGB
5. Choice to continue construction of DGB
6. Early FSAR submittal and inadequate review of FSAR
7. Failure to reconstruct geometry of area prior to fill placement, failure to await NRC approval before proceeding with Preload, selection of "least costly feasible alternative" for DGB.
8. Failure to excavate loose sands as committed to in PSAR
9. Installation of preload instrumentation was subject to time pressure assoc. with frost protection considerations
10. Appeals to NRC to consider financial plight and schedule deadlines as in Seismic Deferral Motion
11. Depth and breadth of surcharge limited by practical consideration of DGB, Turbine B. structures
12. Changes to design (DGB foundation), material, or procedural specifications without proper approval
4. Resulted in additional stresses to DGB which could have been avoided
5. Eliminated practical consideration of Removal & Replacement Option
6. Precluded early detection of inconsistencies which could have prevented some of the s.s. problems
7. Varying degrees of caution and conservatism were foregone in favor of cost and schedule advantages
8. Contributed to inadequacy of subsoils
9. Expenditures for preload instrumentation (CJD 11/1/78 memo) prior to formal adoption of preload = premature commitment
10. If granted, would affect seismic--soil settlement standards
11. Afforded less than optimum conditions for surcharge
12. Contributed to settlement or stress problems and allowed conflicts to go unnoticed as preventative indicators



A. Intervenor Stamiris Contention 3 reads as follows:

Consumers Power Company has not implemented its Quality Assurance Program regarding soil settlement issues according to 10 CFR Part 50, Appendix B regulations, and this represents a repeated pattern of quality assurance deficiency reflecting a managerial attitude inconsistent with implementation of Quality Assurance Regulations with respect to soil settlement problems, since reasonable assurance was given in past cases (ALAB-100, ALAB-106 and LBP-74-71) that proper quality assurance would ensue and it has not.

The Quality Assurance deficiencies regarding soil settlement include:

a) 10 CFR Part 50, Appendix B, Criteria III, V, X and XVI as set forth in the Order of Modification;

b) 10 CFR Part 50, Appendix B, additional criteria denoted by roman numerals below:

I. The Applicant has failed to assume responsibility for execution of the QA program through its failure to verify and review FSAR statements (pp. 6-3 and p. 21, Keppler Report) and through its reliance on final test results not in accordance with specified requirements (p. 16, Keppler Report);

II. The QA program was not carried out according to written policies, procedures and instructions, in that oral directions were relied upon and repeated deviations from policies occurred regarding compaction procedures (p. 9-14, Keppler Report);

VII. Control of purchases material has not been maintained, in that examination and testing of backfill materials did not occur in accordance with regulations (NCR QF29, NCR QF147);

IX. Control of non-destructive testing was not accomplished by qualified personnel using qualified procedures regarding

a) moisture control (Keppler Report p. 14-16; QA Request SD40, NCRQFS52, 172, 174 and 199);

b) compaction procedures (Keppler Report, p. 9, NCR QFS 68, 120 and 130); and

c) plant fill work (pp. 24 and 25, Keppler Report);

XI. Test programs did not incorporate requirements and acceptance limits adequately in the areas referenced in a, b and c above, and do not meet these requirements regarding soil settlement remedial actions;

XIII. Measures were not adequately established to prevent damage or deterioration of material regarding frost effects on compacted fill (pp. 16 and 17, Keppler Report);

XV. Measures were not taken to control non-conforming material in order to prevent the inadvertent use (NCR QF29 and QF127);

c) the settlement of the Administration Building in 1977 should have served as a quality indicator, preventing the same inadequate procedures from occurring in the 1978 construction

of the diesel generator building causing its eventual settlement.