

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	Docket Nos. 50-329-OM
CONSUMERS POWER COMPANY)	50-330-OM
)	50-329-OL
(Midland Plant, Units 1)	50-330-OL
and 2))	

APPLICANT'S REPLY TO MS. STAMIRIS'
"INTERVENOR PROPOSED FINDINGS OF FACT
AND CONCLUSIONS OF LAW ON REMEDIAL
SOILS ISSUES"

Ms. Stamiris' December 16, 1983 proposed findings present two general problems for purposes of this Reply. First, the issues she raises often relate not to the technical adequacy of the proposed remedial measures, but to the implementation of the remedial work. While we agree with Ms. Stamiris that the Licensing Board has to address both subjects (although not necessarily in the same partial initial decision), we prefer to address quality assurance implementation questions which have arisen with respect to the remedial work in our proposed supplemental Q.A. findings to be submitted later this month. In this Reply we merely point out those of Ms. Stamiris' citations which are irrelevant. A second problem is that Ms. Stamiris sometimes refers to Board Notifications and other materials which are not in the evidentiary record. In two cases (BN-83-174 and recently raised concerns relating to cracks and crack reporting, Tr. 22672-22673 and

22676-22678) the information is not only not in the record, it is so incomplete as to make any response almost impossible. As to these two items, the Board and the other parties will be kept informed (Tr. 22676, 22678) and intervenors will have an opportunity to move to reopen the record if, when more facts are known, the matters turn out to be significant. Applicant believes that the Board must rest its decision on the evidentiary record.

For purposes of this Reply, Applicant has numbered Ms. Stamiris' paragraphs.^{1/} As in Applicant's reply to the NRC Staff's November 15 responsive findings on remedial soils issues, Applicant has attempted to minimize repetitive argument. Accordingly, silence in response to any assertion by Ms. Stamiris should not be interpreted as agreement.

2. Applicant disagrees with this paragraph. The facts concerning the 1977 administration building grade beam problem are summarized in Applicant's Proposed Findings of Fact and Conclusions of Law on Management Attitude and Quality Assurance Issues dated October 28, 1981 at ¶s 124-135, and 288-294. Audit Report F-77-32 (Board Ex. 3), to which Ms. Stamiris refers, is discussed in Applicant's Proposed Supplemental Findings of Fact and Conclusions of Law on Quality Assurance and Management Attitude Issues dated

^{1/} By our count, the first paragraph in Ms. Stamiris' "Introduction" is ¶2; "The Soils Remedial Fixes" starts with ¶6; "Auxiliary Building" begins with ¶10; Underground Piping begins with ¶17; "Corrosion" begins with ¶20 and ends with ¶27.

March 15, 1982, at ¶s 319-329. The general issue of whether Applicant knew there were widespread soils deficiencies at the site prior to construction of the DGB was discussed again in Applicant's Response to Motions of Intervenors Mary Sinclair and Barbara Stamiris with respect to Dow Lawsuit, dated August 17, 1983, and in Applicant's Response to "Second Supplemental Memorandum in support of Intervenor Barbara Stamiris' Motion to Litigate Dow Issues", dated October 14, 1983.

3. Applicant made a voluntary commitment in February, 1980 not to proceed with further remedial measures without NRC Staff review and concurrence.^{2/} Some work which would have been prohibited by the Modification Order, had the Modification Order been allowed to become effective, continued after December 6, 1979. However, in each case, this work was discussed in advance with the NRC Staff.^{3/} The Licensing Board stated in its April 30, 1982 Memorandum and Order, LBP-82-35, 15 NRC 1060, 1067: "We find no indication in the record that Consumers has failed to honor this commitment."

^{2/} Keeley, prepared testimony following Tr. 1163, at p.13.

^{3/} Keeley, Tr. 1204, 1202-1212. See also Consumers Power Company's Response to Stamiris Proposed Findings of Fact and Conclusions of Law, dated April 26, 1982, at paragraph 8.

5. Applicant disagrees that there were any instances of abuse of the terms of the April 30, 1982 Memorandum and Order. We agree with Ms. Stamiris that this is a matter for the QA findings.

The Soils Remedial Fixes

6-9. Applicant is indifferent as to whether this Licensing Board issues one partial initial decision or two. We agree with Ms. Stamiris that Applicant's past and future implementation of soils remedial work must be addressed. Ms. Stamiris alleges in paragraph 9 that there have been numerous problems encountered in the remedial underpinning work to date. In support of this statement, in footnote 6 Ms. Stamiris cites a potpourri of quality assurance-related incidents and documents, most of which are not related to the auxiliary building underpinning work.^{4/} A more accurate and complete picture of the progress of the underpinning work will be presented in Applicants proposed supplemental QA findings.

4/ For example, Board Notification 83-155 and Stamiris Exhibits 40-44 deal with drilling incidents; Board Notification 83-106 involves the NRC's authorization for the resumption of safety-related HVAC welding work. BN 82-98 deals with the problem in the QC requalification program which was resolved prior to the initial authorization of the underpinning work on December 9, 1982. Most of the items listed in Appendix A to Ms. Stamiris' September 4, 1982 "Motion for Partial Initial Decision on QA Adequacy in Soils Remedial Work Prior to Commencement of Remedial Underpinning Excavations Stamiris Ex. 55 (SALP II), and Stamiris Exhibit 97 (Report to ACRS on Design and Construction Problems for Period from Start of Construction Through June 30, 1982) do not relate to the auxiliary building, and all of them precede the initial authorization of the auxiliary building underpinning work on December 9, 1982.

Auxiliary Building

10. Applicant disagrees with Ms. Stamiris' accusation that Applicant has refused "to face up to" what she views as a plausible explanation for the auxiliary building cracks, and that this represents "a tendency to be less than forthright about soils problems". We also disagree with her characterization of the NRC Staff's position as an attempt "to skirt this issue altogether". Applicant's Proposed Findings of Fact on Remedial Soils Issues (§s 216 and 217) and the NRC Staff's November 15, 1983 responsive findings (§s 216-218) accurately reflect the professional judgment of their respective witnesses on the subject of such cracks. No adverse conclusions about Applicant's candor or management attitude or the good faith of the Staff can be drawn from the proposed findings or from the underlying expert testimony.

11. Applicant intends to address the load test at Pier W-11 in its proposed supplemental QA findings to be filed in January, 1984. Briefly, there was an inability to transfer the full load to the bottom of the pier, which Applicant (but not necessarily the Staff) attributed to the anti-friction system not working properly.^{5/} Rather than conducting a second load test, Applicant chose another option suggested by the NRC Staff, which was to reanalyze the auxiliary building using a differential settlement of 1/2 inch rather than 1/4 inch (corresponding to a reduced value of the soil

^{5/} Mooney, Tr. 17162.

modulus).^{6/} On September 14 and 15, 1983 the NRC Staff audited these calculations. The audit raised some questions which are identified in Board Notification 83-174 dated November 21, 1983. Applicant hopes to resolve these questions by meeting with the Staff in January, 1984. At the present time not much more can be said in these proposed findings concerning BN 83-174.^{7/}

The occurrence of the cracks in the FIVPs is another subject which Applicant intends to address in its proposed supplemental QA findings in January, 1984. The cracks themselves have been evaluated by Applicant's consultant, Construction Technology Laboratories, and the consultant's conclusion was that these cracks do not impair the structural integrity of the FIVPs.^{8/}

^{6/} Mooney, Tr. 17162-17163, 17170; Landsman, Tr. 16602-16605

^{7/} On December 3, 1983 Ms. Stamiris made an oral motion to hold open or to reopen the record pending the final NRC Staff report on this matter. Tr. 22672-22763. The Licensing Board denied the motion as premature but requested the parties to keep it informed concerning this matter. Tr. 22676.

^{8/} Mooney, prepared testimony at p.23, following Tr. 17017.

The last two concerns raised by Ms. Stamiris in paragraph 11 have already been answered by the Applicant and the Staff in filings dated July 18, 1983 and July 21, 1983, respectively, and have been ruled upon by the Licensing Board in its Memorandum and Order (Denying Motion to Reopen the Record on Containment Cracks) LBP-83-50, 18 NRC _____, (August 17, 1983). Nothing would be gained by rehearsing these matters in this Reply.

12. With the exception of BN-83-174 (relating to the questions raised during the Staff's September 14-15 audit), none of the items listed in this paragraph deal with the technical adequacy of the design for auxiliary building remedial measures. As the Board has ruled, Tr. 22672, it is too early to tell whether BN-83-174 raises any issues which must be addressed in this hearing; certainly proposed findings on this Board Notification are premature. The remaining items will be addressed to the extent we believe necessary in Applicant's proposed supplemental Q.A. findings in January, 1984.

13. Ms. Stamiris' citations in this paragraph are not to the evidentiary record and therefore there is no need to include them in this Reply. The Board will be kept informed as to the resolution of the matters raised in BN-83-174. Tr. 22672. It will also receive any "upcoming Board Notification on excessive NCRs" discussed by Mr. Hood, at Tr. 22677-22678, and it will be informed as to resolution of the concerns about crack mapping discussed in the November 10,

1983 Stone & Webster meeting. The Licensing Board has previously determined that Ms. Stamiris' concern about "continued water seepage problems" in the underpinning excavations is based on a misinterpretation of the Stone & Webster reports. Memorandum and Order (Denying Motion to Reopen Record on Containment Cracks) LBP-83-50, 18 NRC _____ (August 17, 1983).

16. See Applicant's Reply to Ms. Stamiris' paragraph 11.

Underground Piping

7. Ms. Stamiris has apparently misread Applicant's Proposed Findings of Fact on Remedial Soils Issues. We state at ¶320 that the condensate lines were cut on the north side of the DGB prior to the surcharge. Ms. Stamiris has not supplied any citation to the record for her assertion that stress was induced in the condensate piping. In any event, this piping is not safety-related and its failure would not create a safety problem.^{9/}

18. Even if one accepts the Staff's view that due to variable soil properties, the maximum differential settlement in underground piping might occur at some location away from the anchor points, this does not establish any inadequacy in the proposed strain and settlement monitoring program for underground piping. This is because the Staff conservatively required such monitors wherever it believed there could be

^{9/} See Applicant's Proposed Findings of Fact and Conclusions of Law on Remedial Soils Issues, at ¶ 319-321.

a potential problem, based on its review of soil profiles prepared along the line of the underground piping. Kane, Tr. 9086, 9086-9091.

19. Applicant believes Ms. Stamiris' concerns about the reliability of strain gauges are fairly answered in its Proposed Findings of Fact and Conclusions of Law on Remedial Soils Issues, at ¶s 374 and 379, and by the NRC Staff's November 15, 1983 responsive findings at ¶ 374 (with which we agree).

We disagree that Applicant has a "past record of improper and unconservative reporting practices." In support of this statement, Ms. Stamiris refers to "Ad. Bldg.-DGB settlements". We believe the issue she is referring to involves the 1977 administration building grade beam failure. The reporting of this incident has already been discussed in Applicant's October 28, 1981 Proposed Findings of Fact and Conclusions of Law on Quality Assurance and Management Attitude Issues, at ¶s 124-135, 288-294. Ms. Stamiris also refers, without any citation, to "surcharging instrumentation - Sondex data elimination and building settlement readings". Dr. Peck's evaluation of the surcharge instrumentation data and the reasons for discontinuing use of the Sondex instruments are described in Applicant's Proposed Findings of Fact and Conclusions of Law on Remedial Soils Issues at ¶s 105-138 (especially 108). We are unable to see any connection between Dr. Peck's evaluation of this instrumentation and data and Applicant's reporting practices. Perhaps Ms. Stamiris is alleging that Applicant (or its experts) habitually

analyze data in a nonconservative manner, which we also disagree with. We are not sure what Ms. Stamiris means in the preceding quotation when she refers to "building settlement readings." Mr. Kane has testified that he has no reason to question the accuracy of the settlement data reported by Applicant. Tr. 20570. Finally, Ms. Stamiris refers to "the failure to report properly the excessive cracking at the Aux. Bldg." She is apparently referring to the testimony of Mr. Hood on December 3, 1983 concerning excessive NCRs, Tr. 22676-22678, and to her impressions of a public Stone & Webster meeting held on November 10, 1983. See Tr. 22672-22673. The Board will be informed as to the outcome of these items. Tr. 22676. We request that the Board reserve judgment as to whether there is "excessive cracking at the auxiliary building" or whether there have been any "improper or nonconservative reporting practices."

Corrosion

20. Applicant disagrees that the corrosion-inhibiting protective wrappings used on carbon steel piping at Midland are subject to degradation due to "differential settlement bending." The testimony in the record is that these wrappings are inherently flexible and should not fail as a result of the amount of strain that might occur in the underground piping at Midland site. SSER #2, § 3.12.2, p. 3-42. Weeks, Tr. 9146-9149, 9159-9160, 9209-9212. This is not "an unsupported assumption" but the considered judgment of Dr. Weeks, a man whose expert qualifications (following

Tr. 9147) can not be disputed.

21. The concern raised by Resident Inspector Ron Cook, that Applicant's galvanic protection system might promote corrosion, was answered by Dr. Weeks, who pointed out that the polarity of the DC current in the system would have to reverse to cause a corrosion problem. Tr. 9325. There is nothing in the record which suggests a mechanism by which such a reversal in polarity might occur.

The practice of encasing anodes in concrete was corrected almost as soon as it started.^{10/} This potential problem with the effectiveness of the galvanic protection system has been corrected satisfactorily, as described in Applicant's Proposed Findings of Fact and Conclusions of Law on Remedial Soils Issues, at ¶ 387-388 and in the corresponding NRC Staff responsive findings.

The use of uncoated carbon steel lugs to connect the galvanic protection system to the stainless steel BWST piping resulted in accelerated corrosion of the lugs, not the piping, and therefore did not represent a safety problem, although it was not a good practice.^{11/}

^{10/} Woodby, Tr. 9225.

^{11/} Weeks, Tr. 9306-9308, Cook, Tr. 9342, Mr. Woodby testified that all the carbon steel lugs had been found and removed. Tr. 9267, 9279-9281. The NRC Staff had not checked this as of November 18, 1982. Cook, Tr. 9337.

22. As Dr. Weeks testified, there are three areas of protection for underground piping at Midland. The first is that the chemical properties of the fill make it relatively nonaggressive soil. Second, either stainless steel piping (which is resistant to corrosion), was used, or carbon steel piping with appropriate coatings and wrappings. The third area of protection is the galvanic protection system.^{12/}

The fact that the galvanic protection system has periodically been shut down due to construction activities for periods of up to six months does not diminish the protection offered by the good soil chemistry and the corrosion resistance of the stainless steel piping and the coatings and wrappings used for the carbon steel piping. Ms. Stamiris' statement that "there is no practical way to observe cumulative corrosion effects on buried piping" is not, strictly speaking, correct at the present time. As the Staff points out in their November 15, 1983 responsive findings (¶ 394), portions of a BWST line have been inspected for corrosion damage and none was found. We understand Ms. Stamiris' point to be that it would be impracticable to dig piping up after the plant begins operating to look for corrosion. In Applicant's view, this is unnecessary given Dr. Weeks' three areas of protection, the results of the inspection of the BWST line, and the redundancy and other safety features applicable to such nuclear power plant systems and components. See 10 CFR Part 50, Appendix A; Hood, Tr. 10602-10603.

^{12/} Weeks, Tr. 9217.

23. The authors of the 1979 Condensate Tank Fill Pipe Corrosion Study (Stamiris Ex. 36) relied on assurances from field personnel at the site that there was no field welding performed in the immediate vicinity of the corroded section of the condensate pipe. Stamiris Ex. 36, p.3. However, Dr. Weeks testified in response to Judge Harbour's question that welding during installation of the condensate pipe could have been the cause of the observed corrosion, even if that welding were at a distant location, as long as there was electrical continuity between the location of the welding and the corroded section of the pipe. Weeks, Tr. 9434-9435.

24. Ms. Stamiris' quotation of the 1979 Condensate Tank Fill Pipe Corrosion Study (Stamiris Ex. 36) is selective. The study goes on to say on the same page, "The important point is that the sand samples taken from the general area of the corroded pipe were found to be free of harmful contaminants."

25. The "redish brown surface stain" referred to in the 1979 Condensate Tank Fill Corrosion Study was analyzed and found to be composed of iron oxides and adherent particles of the sand fill. The 1979 Report states that the presence of iron oxides is typical of austenitic stainless steel corrosion products. Stamiris Ex. 36, p.6 and attached Anamet Laboratories, Inc. Certificate No. 879.377, pp.2 and 4. There is no support in the record for Ms. Stamiris' assertion that these results "would tend to indicate the

existence of a more benign or gradual corrosive agent, such as chemical as opposed to 'welding current' causes acting on the condensate lines." Dr. Weeks obviously does not share this opinion.

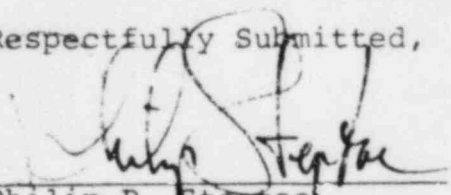
Three sand samples were analyzed in the 1979 Condensate Tank Fill Pipe Corrosion Study (Stamiris Ex. 36) and three more were analyzed in the 1981 Stainless Steel Pipe Corrosion Study (Stamiris Ex. 37). Two of the sand samples analyzed in the 1979 study were taken as close to the corroded pipe as practicable, Stamiris Ex. 36, p.2, and the absence of harmful contaminants in those two samples is persuasive evidence that the corrosion was not due to chemical contamination. Weeks, Tr. 9446-9452. Dr. Weeks also testified that he believed the number of sand samples analyzed was adequate. Tr. 9365-9366.

26. It is important to note that the experimental findings of the 1981 Study (Stamiris Ex. 37) were the same as the experimental findings of the 1979 study (Stamiris Ex. 36). See Stamiris Ex. 37, p.2; Weeks, Tr. 9176. The different conclusions in the two reports are attributable to the fact that different people worked on them, and also to the discovery by the authors of the 1981 report of poor field welding procedures which could give rise to such corrosion. Weeks, Tr. 9176, 9180; Stamiris Ex. 37, pp.2, 7-10. Ms. Stamiris' attack on the motives of the investigators is unwarranted; in fact the authors of the 1981 study called for the activation of the galvanic protection system, inspection of more buried

pipng, and the improvement of field welding practices, Stamiris Ex. 37, p.3, and these recommendations were followed. See Stamiris Ex. 38, Weeks, Tr. 9384-9385, 9395.

27. Dr. Weeks read the 1979 study and the 1981 study, but he relied on them only for their discussion of the soil chemistry and the observed pitting corrosion. Weeks, Tr. 9352. He also aggressively pursued additional information in performing his review. Weeks Tr. 9353. He recognized the discrepancies between the 1979 study and the 1981 study to which Ms. Stamiris refers, and formed his own independent conclusions. Weeks, Tr. 9384-9385, 9173-9174. His testimony can not be discredited on this basis. Moreover, the inspections of substantial portions of the remaining buried pipng at the site provide the best assurance that what is there now is satisfactory. Weeks, Tr. 9386; Cook, Tr. 9212-9214, 9216; Stamiris Ex. 38.

Respectfully Submitted,



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