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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE
DOCKETING & RECORDS
BRANCH

Before the Atomic Safety and Licensing Board

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

CONSUMERS POWER COMPANY'S
RESPONSE TO THE NRC STAFF PROPOSED
FINDINGS OF FACT AND CONCLUSIONS OF LAW

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OF FACT AND CONCLUSIONS OF LAW

Pursuant to 10 CFR §2.754, Consumers Power Company ("Consumers Power") submits the following response to the Nuclear Regulatory Commission ("NRC") Staff Proposed Findings of Fact and Conclusions of Law ("Proposed Findings").

NRC Staff Proposed Findings

- I. Introduction
Paragraphs 1-40. No response.
- II. Construction Approved by Staff
Paragraphs 41-56. No response.
- III. Stamiris Contention No. 1
Paragraphs 57-60. No response

Material False Statement in FSAR

Paragraph 61. No response.

Paragraphs 62 and 63. Appendix B of the December 6, 1979 Order Modifying Construction Permits ("Modification Order") did cite an inaccuracy in the Midland FSAR as a "material false statement". The FSAR incorrectly stated that "All fill and backfill were placed according to Table 2.5-9."^{1/} The Modification Order carefully defined what the NRC Staff considered "material" in the FSAR statement: it prevented the NRC Staff from knowing that "Category I structures had been placed in fact on random fill."^{2/} The alleged failure to meet the compaction criteria was not cited as contributing to the materiality of the statement.

Paragraph 64. No response.

Paragraph 65. Mr. Hood also testified that the fact that structures are built on random, heterogeneous fill, rather than homogeneous fill, is irrelevant to safety considerations, as long as the fill beneath them is adequately compacted.^{3/} Mr. Kane agreed with this conclusion.^{4/}

Paragraph 66. No response.

Paragraph 67. Consumers Power witness Stephen Howell declined to characterize the inconsistencies in the Midland FSAR as "false" because he understood the word "false" to connote an element of intent.^{5/} His purpose in

^{1/} Stamiris Exhibit No. 3, Attachment No. 15, at p. 3.

^{2/} Id.

^{3/} Hood, Tr. 4426-27.

^{4/} Kane, Tr. 4427.

^{5/} Howell, Tr. 2866-67.

denying the "falsity" of the FSAR statements was not to deny the existence of the inconsistencies; he acknowledged their presence.^{6/} His purpose, rather, was to emphasize that any FSAR inaccuracies which might exist were inadvertent^{7/} and provided no basis for concluding that Consumers Power has a less than complete or candid dedication to providing information to the NRC Staff.^{8/}

Paragraph 68. Contrary to the NRC Staff's assertion, Mr. Howell never testified that there was no material false statement in the Midland FSAR.^{9/} His testimony was that if the FSAR did contain a material false statement, that fact alone would not be proof of a poor managerial attitude with respect to providing information to the NRC Staff.^{10/}

Paragraph 69. No response.

Paragraph 70. The material false statement cited in Appendix B of the Modification Order addresses only the soil type of the fill, and not the compaction criteria.^{11/}

Failure To Provide Information
On Geologic Classification

Paragraphs 71-77. No response.

6/ Id.

7/ Howell, prepared testimony at pp. 16-17, following Tr. 2800.

8/ Id.

9/ Id.

10/ Id.

11/ Stamiris Exhibit No. 3, Attachment No. 15, at p. 3.

Failure To Provide Acceptance Criteria

Paragraph 78. No response.

Meeting of March 31, 1980

Paragraph 79. On February 27 and 28, 1980, representatives from the NRC Staff, Consumers Power, Bechtel and Bechtel's consultants attended a meeting and site tour at the Midland plant.^{12/} At that meeting, the NRC Staff requested that Consumers Power make five sets of documents available, by docketing copies of them with the license application in Washington, D.C.^{13/} The meeting notes, and the NRC Staff's Proposed Findings of Facts and Conclusions of Law, report that Consumers Power "indicated a reluctance to this end."^{14/} However, both the meeting notes and the NRC Staff's Proposed Findings ignore the crucial explanation of what Consumers Power was reluctant to do. As the NRC Staff itself testified, Consumers Power was not reluctant to provide the requested information to the NRC Staff: Consumers Power volunteered to make the documents available through the audit mechanism, which would allow for NRC Staff review at Bechtel's Ann Arbor offices.^{15/} Mr. Hood explained that Consumers Power's

^{12/} NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 9, at p. 1 and Enclosure 1, following Tr. 1560.

^{13/} NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 8, following Tr. 1560.

^{14/} NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 9, at p. 3, following Tr. 1560.

^{15/} NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 8, following Tr. 1560.

"reluctance" was directed only toward the mechanism through which the NRC Staff requested that the documentation be made available.^{16/} Consumers Power pointed out that providing the material through the docketing process would be a burdensome and expensive task.^{17/} The documents requested were quite voluminous:^{18/} the final request list ran several pages and required forty copies of each requested item.^{19/} Many of these documents were not even normally found within the docketed material for an application for a license.^{20/} "The purpose of the ['reluctance'] comment," the NRC Staff explained, "was to explore the possibility that the NRC Staff's need for the documents might be accomplished through a less burdensome and expensive mechanism, such as the audit mechanism."^{21/} After a discussion on alternative methods, the NRC Staff formally requested the documents in April, 1980.^{22/} The NRC Staff testified that, with but a single exception, Consumers Power responded to this request in a timely and cooperative manner.^{23/}

^{16/} Id.

^{17/} Id.

^{18/} Id.

^{19/} NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 10, at pp. 1-2 and Enclosure 1, following Tr. 1560.

^{20/} NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 8, following Tr. 1560.

^{21/} Id.

^{22/} Id., and Attachment No. 10.

^{23/} Hood, Tr. 2675, 2734.

Paragraph 80. No response.

Paragraph 81. The NRC Staff's conclusion that Consumers Power's response to the request for an equipment qualification report evidenced poor cooperation with the NRC Staff and reflected adversely on the Consumers Power quality assurance officials involved, is unsupported by the evidence before the Licensing Board.

At a December 4, 1978 meeting between representatives of Bechtel, Consumers Power and the NRC Staff, the NRC Staff resident inspector requested documentation of the compaction capability of equipment which had been used at the diesel generator building.^{24/} At that meeting, there was considerable discussion about whether such documentation even existed.^{25/} Mr. Gallagher thought that the Bechtel project engineer had suggested that it did exist; however, no one could locate it during the meeting.^{26/} A Bechtel representative said Bechtel would forward the documentation, if it could be found.^{27/} It was later determined that no such report did exist.^{28/} No one offered evidence to suggest it ever had existed. However, Bechtel did forward to the

^{24/} NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 11, at pp. 1 and 4, following Tr. 1560; Gallagher, Tr. 2549-50.

^{25/} Gallagher, Tr. 2550.

^{26/} Id.

^{27/} NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 11, at p. 4, following Tr. 1560.

^{28/} Gallagher, Tr. 2577, 2550.

NRC Staff what documentation on qualification of compaction equipment it had, by telexing to them a list of equipment which had been previously qualified.^{29/}

It is difficult to discern any support for the NRC Staff's conclusion in this sequence of events. Bechtel demonstrated no lack of cooperation with the NRC Staff. It gave the NRC Staff all the information it had on qualification of compaction equipment. It could not forward a report that did not exist. This response did not "reflect adversely" on anyone at Midland: there is no evidence to show that Consumers Power quality assurance officials were even involved in the request and Bechtel, which was involved, cooperated to the fullest extent possible.

Once it realized that no equipment qualification report on machines used for the diesel generator building soils existed, the NRC Staff changed its request.^{30/} In March, 1979, the NRC Staff asked Consumers Power to submit a qualification report for compaction equipment presently being used in on-going soils work.^{31/} Mr. Gallagher testified that Consumers Power began to develop the data needed for such a report a "short time" after the request was made.^{32/} The tests took several months to complete, and the

^{29/} Id., Tr. 2603.

^{30/} Id., Tr. 2577.

^{31/} Id., Tr. 2550-51, 2577.

^{32/} Id., Tr. 2577.

report was eventually forwarded to the NRC Staff in response to its request.^{33/} This report "related to the qualification of equipment to be used for subsequent work, not the original request for documentation of the equipment used at the DGB" because the NRC Staff had changed its original request to one asking for equipment qualification for subsequent work.^{34/}

Consumers Power's response to this second request does not "reflect adversely on the responsible officials involved in the execution of Consumers Power's quality assurance program". Mr. Gallagher identified only two Consumers Power quality assurance officials who were involved with the response to the NRC Staff's request: Mr. Donald Horn, Consumers Power's quality assurance civil site supervisor,^{35/} and Mr. Walter Bird, Consumers Power's MPQAD manager.^{36/} Mr. Gallagher admitted that he did not even speak to Mr. Horn about the equipment qualification report until mid-1979.^{37/} Mr. Gallagher affirmed that Mr. Horn was trying his hardest to obtain the report for the NRC Staff.^{38/} Mr. Gallagher initially denied having spoken to anyone other

^{33/} NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 9, following Tr. 1560.

^{34/} Gallagher, Tr. 2550-51, 2577.

^{35/} Id., Tr. 2605, 2597-98.

^{36/} Id., Tr. 2606.

^{37/} Id., Tr. 2597-99.

^{38/} Id., Tr. 2599.

than Mr. Horn about the report,^{39/} then remembered speaking to Mr. Bird.^{40/} He did not call Mr. Bird about the matter until May 12, 1980.^{41/} Mr. Gallagher warned Mr. Bird that he would ask for a qualification report on his next site visit.^{42/} Mr. Bird promised to investigate the situation and take appropriate action.^{43/} Mr. Bird called Mr. Gallagher back the following day; he informed him that the qualification report was in the process of being prepared and would be forwarded to the NRC Staff in the coming months.^{44/} Mr. Horn's "trying his hardest" and Mr. Bird's immediate investigation and response contravene the charges of "dilatory" action. Thus there is no support for the claims of "poor cooperation" and "adverse reflection" made by the NRC Staff.

Paragraph 82. Mr. Gallagher testified that the equipment qualification report was needed by the NRC Staff consultants and the NRC Staff inspector to enable them to perform their statutory function.^{45/} However, regulations do not require applicants to make such reports or the NRC Staff to review them. Consumers Power had not committed in

^{39/} Id., Tr. 2604-5.

^{40/} Id., Tr. 2606.

^{41/} NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 12, following Tr. 1560.

^{42/} Id.

^{43/} Id.

^{44/} Id.

^{45/} Gallagher, Tr. 2601.

its FSAR to make such a report.^{46/} The "statutory function" to which the NRC Staff refers in its proposed findings is the function described by Mr. Gallagher as the duty "to protect the health and safety of the public."^{47/} But there has been no showing that the health and safety of the public were threatened by the delay in receiving the report. No soils work has been performed using compaction equipment which had not been qualified, from the date of the original request up until the present time. No soils work at all was performed from the time of the diesel generator building settlement until mid-1979.^{48/} In mid-1979, miscellaneous soils work was resumed,^{49/} but Consumers Power pledged at that time to do no soils work with unqualified equipment.^{50/} Mr. Gallagher verified that the pledge had been kept.^{51/}

Paragraph 83. Although Mr. Gallagher asserted that the qualification of compaction equipment is a "fairly well-established industry practice,"^{52/} he failed to cite any examples to support his assertion. There is no evidence that any of the compaction equipment used at Midland was

^{46/} Id., Tr. 2578.

^{47/} Id., Tr. 2601.

^{48/} Id., Tr. 2552.

^{49/} Id.

^{50/} Id., Tr. 2604.

^{51/} Id.

^{52/} Id., Tr. 2579.

unqualified. Moreover, the question posed by this contention challenges documentation of the equipment qualification, not the qualification itself.

Mr. Gallagher's speculation that it would take several weeks to develop an equipment qualification report^{53/} should not be taken as conclusive proof of the time required to comply with the NRC Staff's request. The request by the NRC Staff resident inspector to develop a report was premised on the assumption that the soils compaction equipment was still on the site and in use.^{54/} However, under questioning, Mr. Gallagher admitted uncertainty as to whether the original soils equipment was in use or even at the site at the time of that request.^{55/} He conceded that there was in fact no soils work being performed on site from July, 1978, shortly after the diesel generator building settlement occurred and five months before the first request, until early or mid-1979, the time of the second NRC Staff request.^{56/} During this period, developing a qualification report was obviously not simply a matter of qualifying equipment currently in use, on the basis of the work being performed at that time.^{57/} Rather, equipment not currently in use, and perhaps

^{53/} Id., Tr. 2576.

^{54/} Id., Tr. 2551.

^{55/} Id.

^{56/} Id., Tr. 2552.

^{57/} Id., Tr. 2552-53.

not even at the site, would have to be mobilized and test fills would have to be laid before the testing of the equipment could even begin.^{58/} Moreover, Mr. Gallagher's timetable presupposed testing only "a couple of pieces of equipment".^{59/} Mr. Gallagher admitted, however, that he did not know the number or types of equipment that were used at Midland.^{60/} In summary, there is little basis for the conclusion that equipment qualification "is not a lengthy process" and "certainly would not take more than one month to accomplish."^{61/}

Paragraphs 84-85. No response.

Paragraph 86. The NRC Staff has not presented sufficient evidence to support Item 1 of Stamiris Contention No. 1 in regard to the NRC Staff request for an equipment qualification report.

First, there was no reason why Consumers Power should have possessed the sort of documentation that was originally requested. As explained above, development of such documentation was not required by statute or regulation, committed to by Consumers Power in its FSAR or specifically requested by the NRC Staff before 1979. Second, there is no basis for the conclusion that development would not be a

^{58/} Id., Tr. 2552.

^{59/} Id., Tr. 2576.

^{60/} Id., Tr. 2596.

^{61/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 26, paragraph 86.

"lengthy task", since soils equipment was not in use and may not even have been on the site, and test fills would have to be re-laid for each type of fill and each piece of equipment.

Finally, there is no evidence supporting the conclusion that this incident demonstrated "a less than complete and candid dedication to providing information" to the NRC Staff by Consumers Power management. As shown above, the only Consumers Power officials directly involved with Mr. Gallagher's request, Mr. Horn and Mr. Bird, were prompt and dedicated in attempting to comply with the request. Mr. Gallagher admitted that he had never contacted anyone above Messrs. Bird and Horn in project management about the request.^{62/} The NRC Staff admits the truth of the testimony of Consumers Power's witness, Mr. Stephen Howell, that he never obstructed the NRC Staff's request.^{63/} Recognizing these facts, Mr. Gallagher himself never went so far in his own prepared testimony as to claim that this incident demonstrated a "less than complete and candid dedication to providing information" by Consumers Power.^{64/} The NRC Staff's proposed finding is without evidentiary support.

Consumers Power Statement Made
in Meeting of August 6, 1979

Paragraphs 87-90. No response.

^{62/} Gallagher, Tr. 2607.

^{63/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 26, paragraph 85; Howell, Tr. 2979.

^{64/} NRC Staff prepared testimony on Stamiris Contention No. 1, at pp. 8-10, following Tr. 1560.

Statement by Darl Hood at
SALP Meeting of November 24, 1980

Paragraph 91. On November 24, 1980, the NRC Staff conducted a meeting of the "Systematic Assessment of Licensee Performance" (SALP) Board for Midland.^{65/} During the meeting, Darl Hood, a member of the SALP Board commented:

a big contributor to the inability to make meaningful progress in this matter is the quality of response gotten. We have set some kind of record on the number of questions re-asked, which speaks poorly for CPCo/NRR interface....The bottom line 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 assurance.^{66/}

Mr. Hood's comment was not addressed to "the Midland Plant FSAR review in general and the soils settlement matter in particular." Rather, the comment was prompted by three very specific concerns, relating to (1) the inefficiency of the NRC Staff review of the Midland facility caused in part by the need to re-ask certain questions during the early phase of the FSAR review,^{67/} (2) the placement and removal of the diesel generator building surcharge without first providing an adequate response to 50.54(f) Request 4,^{68/} and (3) the

^{65/} Hood, NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 12, following Tr. 1560.

^{66/} Id.

^{67/} Hood, Tr. 2633-34.

^{68/} Hood, NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 12, following Tr. 1560.

construction of the borated water storage tanks without first performing a finite element analysis.^{69/}

Paragraph 92. Mr. Hood's first concern was the slowness and inefficiency of the NRC Staff licensing review of Midland.^{70/} He testified to several causes for the inefficiency.

His comment specifically referred to the NRC Staff's need to re-ask some of the first set of FSAR questions sent to Midland.^{71/} All of the information which the NRC Staff sought was supplied in response to a second round of questions; there is no indication that the questions had to be asked again.^{72/} Moreover, Mr. Hood never attributed this need to re-ask FSAR questions to any attempt by Consumers Power to withhold information from the NRC Staff. Mr. Hood cited no other examples of questions which had to be re-asked.^{73/}

Mr. Hood testified that the "poor CPCo/NRR interface" was not solely the fault of Consumers Power.^{74/} Even the statement which forms the basis for Ms. Stamiris' Contention describes the need to re-ask questions as a "contributor to", rather than the sole cause of, the inefficient review

^{69/} Id.

^{70/} Hood, Tr. 2634.

^{71/} Id., Tr. 2633-34.

^{72/} Id.

^{73/} Id.

^{74/} Id., Tr. 2700.

process.^{75/} As Mr. Hood admitted, the NRC Staff acknowledges that its own resource problems in 1979 also contributed to the slowness of its review.^{76/} For example, the Army Corps of Engineers was hired as a consultant to the NRC Staff in late 1979, in the middle of the FSAR review.^{77/} Mr. Hood testified that, although bringing in the Corps at a late date was not itself a reason for having to re-ask questions,^{78/} it did serve to lengthen the review process. It took the Corps some time to familiarize itself with the Midland soils problems; by the time it had become familiar with the issues, approximately eighteen months had passed since the settlement was first reported to the NRC Staff.^{79/}

Paragraph 93. The Three Mile Island accident in 1979 also put severe strains on the NRC Staff resources and exacerbated the inefficiency of the Midland review process.^{80/} As Mr. Hood admitted, if the NRC Staff had not been so occupied, the Midland review might have been accomplished in a more timely fashion.^{81/} Mr. Howell confirmed that the NRC

^{75/} NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 12, following Tr. 1560.

^{76/} Hood, Tr. 2747-48.

^{77/} Id., Tr. 2704-05.

^{78/} Id., Tr. 2706.

^{79/} Id., Tr. 2705-06.

^{80/} Id., Tr. 2700-02.

^{81/} Id., Tr. 2702.

Staff conducted virtually no review of the Midland application between March, 1979 and March, 1980.^{82/}

Paragraphs 94 and 95. Mr. Hood's original objection and Ms. Stamiris' original contention took exception to Consumers Power's placement and removal of the surcharge on the diesel generator building without first providing an answer to 10 CFR 50.54(f) Question 4.^{83/} Mr. Hood later conceded that 10 CFR 50.54(f) Question 4 was sent to Consumers Power two months after the surcharge was placed^{84/} and it was illogical to censure Consumers Power for failing to answer a request it had not yet received.^{85/}

The NRC Staff now claims that Consumers Power's choice of the observational approach as a remedy for the problems at the diesel generator building was improper^{86/} and demonstrated a "tendency to push ahead despite the lack of proper assurance."^{87/}

The NRC Staff first charges that the observational or proof test approach used by Consumers Power on the diesel generator building was not tailored to its "accustomed"

^{82/} Howell, Tr. 2860.

^{83/} Hood, NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 12, following Tr. 1560.

^{84/} Hood, Tr. 2676.

^{85/} Id., Tr. 2676-77.

^{86/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 30, paragraph 95.

^{87/} Id., at p. 29, paragraph 94.

licensing review method. This implies that the very choice of such an approach showed that Consumers Power tended to "push ahead" without providing assurances to the NRC Staff.^{88/} But the NRC Staff never warned Consumers Power of their current strong objections to the observational approach. The NRC Staff's need for "upfront" criteria during its review process is merely "accustomed,"^{89/} not statutory. Nothing in the statutes or regulations prohibited Consumers Power's use of such an approach or put it on notice that it might not satisfy the NRC Staff. Nor did the NRC Staff ever communicate its strong disapproval of the observational method. It never told Consumers Power not to utilize a preload^{90/} and never even suggested that Consumers Power's chosen method might make the NRC Staff review more difficult.^{91/} All the NRC Staff told Consumers Power was that it could proceed with the preload at its own risk.^{92/}

The "risk" comment was not an unusual qualification for the NRC Staff to put on any ruling.^{93/} Mr. Howell of Consumers Power did not understand it to denote lack of NRC Staff approval.^{94/} He interpreted the NRC Staff's com-

^{88/} Id.

^{89/} Id.

^{90/} Hood, Tr. 2678, 2736; Gallagher, Tr. 2391-92.

^{91/} Hood, Tr. 2678.

^{92/} Gallagher, Tr. 2392.

^{93/} Howell, Tr. 2829.

^{94/} Id.

ment to mean that it was going along with the idea of a preload.^{95/} In summary, the evidence before the Licensing Board shows that if the NRC Staff held its present views about the impropriety of the observational method before the preload was applied, it failed to make those views known to Consumers Power. It is illogical to censure Consumers Power for using an approach that the NRC Staff disapproved of if the NRC Staff never communicated the disapproval.

The NRC Staff next claims that it "lacked assurances" of the efficacy of the preload because the preload, as an observational approach, does not provide "upfront" criteria against which its results can be measured.^{96/} This does not mean, however, that the preload results could not be predicted before it began or that its success could not be measured and assured once it had been completed.

Dr. Peck, a consultant hired by Bechtel to advise and guide remedial soils work at Midland, predicted the results of the preload^{97/} and informed the NRC Staff of his predictions before the preload began.^{98/} He described to the Licensing Board the process by which the results of the preload were measured and its success in achieving compaction

^{95/} Id., Tr. 2831.

^{96/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 29, paragraph 94.

^{97/} Hood, Tr. 2683.

^{98/} Id.; NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 11, at p. 4, following Tr. 1560.

determined.^{99/} The purpose of the preload, he explained, was to apply ground pressure to the soils beneath the diesel generator building to compact the soils so greatly that further settlement after the building was put in use would be substantially reduced or virtually eliminated.^{100/} After soil has been surcharged once, its compressability with respect to any future loads is greatly decreased: the preload has compressed the soil to the maximum compaction it will ever reach.^{101/} If future stress from the operation and weight of the building are less than that associated with the surcharge, future settlement will be minimal.^{102/}

When the preload is placed, settlement begins. Settlement takes place in two stages. The first, primary consolidation, occurs when the water is squeezed out of the pores of the soil. The second stage, secondary consolidation, is much slower and is not associated with water in the pores.^{103/}

The preload's effectiveness can be measured while the preload is in place, by making two types of observations, geared to the two stages of consolidation and to two

^{99/} Peck, Tr. 3212-15.

^{100/} Id., Tr. 3212.

^{101/} Id., Tr. 3212-13.

^{102/} Id., Tr. 3215.

^{103/} Id., Tr. 3212-15.

different types of soils.^{104/} The most important observation is of the settlement of the original ground surface under the preload's pressure.^{105/} The rate of settlement decreases over time; if it is plotted on a graph as a function of time, this rate of settlement flattens from a decreasing curve into a straight line.^{106/} When this "straightline relationship" is reached it is a sign that measurable settlement has ceased, and secondary compaction has been achieved.^{107/} These observations of settlement and the determination of the straightline relationship constitute the principal control and criteria of success for the surcharging process.^{108/}

The second type of observation, made on clayey soils, measures the excess water pressure in the clay.^{109/} Following application of the preload, the pressure from the surcharge transfers to the water in the pores of the clay, causing "excess pressure".^{110/} This extra pressure drives the water out of the clay, and compresses the soil.^{111/} Primary

^{104/} Id., Tr. 3213-14.

^{105/} Id., Tr. 3213.

^{106/} Id., Tr. 3214.

^{107/} Id.

^{108/} Id.

^{109/} Id.

^{110/} Id.

^{111/} Id.

consolidation has been achieved when the water is squeezed out of the soil and all excess pore pressure has dissipated.^{112/} The preload has caused maximum compaction of the soil when settlement has reached the straight line portion of the plot or when the excess pore pressures have been dissipated; the surcharge may then be removed.^{113/}

Consumers Power witnesses testified that these two observations were made on the preload of the diesel generator building at Midland. Settlement was carefully monitored by Bechtel and its consultants, until they were sure compaction had been achieved.^{114/}

Moreover, Mr. Hood confirmed Dr. Peck's observations that the success of the preload is measurable. He admitted that once the preload is applied, data on its success or failure accumulates daily^{115/} and it is fully possible to determine the success of the preload in curing the soils settlement condition.^{116/}

The NRC Staff and Consumers Power obviously had means for determining the progress of the preload and criteria for determining its success. The fact that these were not "upfront" criteria should not be a basis for penalizing

^{112/} Id., Tr. 3214-15.

^{113/} Id., Tr. 3215.

^{114/} Peck, Tr. 3237 and prepared testimony at p. 4, following Tr. 3211; Hendron, Tr. 4051, 4053; Howell, Tr. 2984.

^{115/} Hood, Tr. 2681.

^{116/} Id., Tr. 2680.

Consumers Power. As Mr. Hood admitted, "reasonable assurance", rather than upfront acceptance criteria, is required.^{117/} The recommendation of the consultants, the measurements during preload, and the assurance of consolidation all gave the NRC Staff reasonable assurance of the success of the preload.

Moreover, Consumers Power chose the preload over removal and replacement of the fill precisely because it did give greater assurance that the diesel generator building would be built on stable compacted soils. Bechtel hired two consultants, Dr. Alfred Hendron and Dr. Ralph Peck, to advise it in its choice and application of a remedy for the soils problem. After studying the situation, Dr. Peck and Dr. Hendron both concluded that the preload was superior to removal and replacement of the fill.^{118/} Removal and replacement could not guarantee that the new soil would not settle under the diesel generator building; the risk of future settlement was inherent in the plan.^{119/} A preload, on the other hand, gives greater actual assurance of stable soils^{120/} by subjecting the soil to more pressure than will ever be applied by the completed building,^{121/} it assures thereby

^{117/} Id., Tr. 4442.

^{118/} Peck, Tr. 3337-39; Hendron, Tr. 4047, 4081.

^{119/} Hendron, Tr. 4047, 4083; Peck, Tr. 3337-40.

^{120/} Hendron, Tr. 4047.

^{121/} Peck, Tr. 3340; Hendron, Tr. 4082-83.

that future settlement, if any, will be negligible.^{122/} Use of the preload, therefore, gives much greater assurance of success in curing the soils problems than does the option which provides upfront criteria.

Finally, the NRC Staff alleges that Consumers Power's decision to proceed with placement and removal of the preload demonstrates Consumers Power's "tendency to push ahead despite lack of proper assurance" because "the NRC Staff was looking for certain information prior to and during the surcharge program which was not forthcoming."^{123/}

However, the evidence before the Licensing Board shows that the information "was not forthcoming" for the simple reason that the NRC Staff never told Consumers Power that it wanted more information. The NRC Staff was fully informed of Consumers Power's plan to proceed with the preload. The NRC Staff notes from a December 4, 1978 meeting between the NRC Staff, Bechtel, Bechtel's consultants and Consumers Power reveal an extensive presentation by Dr. Peck on the plans for the preload and a tentative schedule for its placement and removal.^{124/} Although the notes reveal that the NRC Staff asked questions about the surcharge, there is no indication that the answers given were

^{122/} Peck, Tr. 3338.

^{123/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 30, paragraph 94.

^{124/} NRC Staff prepared testimony on Stamiris Contention No. 1, Attachment No. 11 at pp. 3-5, 7, following Tr. 1560.

inadequate.^{125/} No member of the NRC Staff told Consumers Power to wait until it could formulate more questions.^{126/} No one ever told Consumers Power not to proceed with the preload.^{127/} Consumers Power followed up its December, 1978 presentation with a letter to the NRC Staff advising of its intent to place the preload.^{128/}

The same situation occurred when Consumers Power prepared to remove the surcharge. Consumers Power informed the NRC of its intent to remove the preload.^{129/} The NRC Staff did have questions about the removal, so it sent 10 CFR §50.54(f) Request 4 in March, 1979.^{130/} Consumers Power replied to the NRC Staff request. Then, in a meeting with the NRC Staff on July 16, 1979, Consumers Power gave the NRC Staff additional information about the preload, and reiterated its plans to remove the surcharge.^{131/} Mr. James Knight, Assistant Director of Systems, Components and Structures in the NRC Division of Engineering,^{132/} told Consumers Power that the information supplied at this meeting was significant,

^{125/} Id.

^{126/} Id.; Hood, Tr. 2678.

^{127/} Hood, Tr. 2678, 2736; Gallagher, Tr. 2391-92.

^{128/} Hood, Tr. 4169.

^{129/} Id., Tr. 4170, 2685-87.

^{130/} Id., Tr. 2676.

^{131/} Hood, Tr. 2686; Keeley, Tr. 1408.

^{132/} Hood, Tr. 2692.

and requested that it be documented.^{133/} Consumers Power complied with his request in less than thirty days.^{134/} However, no one from the NRC Staff, during or after the meeting, suggested that the company's response to 10 CFR §50.54(f) Question 4 was inadequate or that Consumers Power should refrain from further work on the preload.^{135/} Nor did anyone from the NRC Staff tell Consumers Power that the surcharge should not be removed yet.^{136/} If the NRC Staff, as it claims, was "looking for information...during the surcharge program" above and beyond the information Consumers Power had already given it, it failed to make that fact known to Consumers Power. Consumers Power should not be censured for not being "forthcoming" with information that the NRC Staff never asked for.

Paragraph 96. Mr. Hood testified that the second basis of his "bottomline" statement was Consumer Power's decision "to proceed with construction of the borated water storage tanks without first performing the analyses for variable foundation properties and cracks as discussed in the response to 10 CFR §50.54(f) Request 14."^{137/} Mr. Hood and the NRC Staff conceded that the only analysis they make

^{133/} Id., Tr. 2689.

^{134/} Id.

^{135/} Id., Tr. 2688.

^{136/} Id.

^{137/} Hood, NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 12, following Tr. 1560.

reference to is a "finite element analysis."^{138/} However, neither 10 CFR §50.54(f) Question 14 nor the NRC Staff ever requested such an analysis be made.^{139/}

The NRC Staff sent 10 CFR §50.54(f) Question 14 to Consumers Power in March, 1979.^{140/} It requested an evaluation of (1) the effects of existing and/or anticipated cracks on the intended function of the tanks^{141/} and (2) the ability of the tanks to withstand increased differential settlement.^{142/} In response, Consumers Power conducted an investigation of the cracks in the borated water storage tank foundation ring.^{143/} The investigation concluded that the cracks were localized and extremely small.^{144/} Consumers Power also dug a test pit and took borings beneath the ring in order to evaluate the properties of the tank's foundation soils.^{145/} Based on these results, Consumers Power concluded that the cracks were merely shrinkage cracks, and that the soils under the foundation ring were sound.^{146/}

^{138/} Hood, Tr. 2721.

^{139/} *Id.*, Tr. 2723-24.

^{140/} *Id.*, Tr. 2713.

^{141/} *Id.*, Tr. 2716.

^{142/} *Id.*, Tr. 2723.

^{143/} *Id.*, Tr. 2715.

^{144/} *Id.*

^{145/} *Id.*, Tr. 2716-17.

^{146/} *Id.*, Tr. 2718, 2722.

Before constructing the tanks in September, 1979, Consumers Power provided the results of these investigations and a crack map to the NRC Staff.^{147/} At a meeting between the NRC Staff and Consumers Power in July, 1979, Consumers Power informed the NRC Staff of plans to proceed with construction of the tanks.^{148/} At that time, no one from the NRC Staff told Consumers Power of any reservations they might have had about such a plan or advised it not to proceed.^{149/} Nor did the NRC Staff tell Consumers Power that it disagreed with the investigation conclusions. Even after the NRC Staff received Consumers Power's response to 10 CFR §50.54(f) Question 14, the NRC Staff failed to make known any reservations about the Consumers Power analysis or tell the company to delay its construction plans.^{150/} Even after Consumers Power began construction on the tanks in September, 1979,^{151/} the NRC Staff failed to disclose its dissatisfaction with the crack analysis or to advise Consumers Power to discontinue construction.^{152/}

Consumers Power's decision to proceed with the borated water storage tanks cannot fairly be regarded as

^{147/} Id., Tr. 2715-18.

^{148/} Id., Tr. 2726-27.

^{149/} Id., Tr. 2727.

^{150/} Id., Tr. 2724-25.

^{151/} Id., Tr. 2717-18.

^{152/} Id., Tr. 2719-20.

exhibiting a "tendency to push ahead despite lack of proper assurance" since it was neither told not to proceed with construction nor advised that the NRC Staff believed that the information supplied was inadequate.

Paragraph 97. Contrary to Ms. Stamiris' contention and the NRC Staff's conclusion, Consumers Power has shown no reluctance to provide the NRC Staff with "requested information." The foregoing discussion shows that Consumers Power supplied the NRC Staff with all of the information asked for; any information not supplied was simply not requested.

Paragraph 98. Item 3 of Stamiris' supplement to Contention No. 1 cannot be sustained on the basis of the evidence before the Licensing Board. The NRC Staff has produced no evidence showing that Consumers Power did not give its "full cooperation" before proceeding with the surcharge and construction of the tanks.^{153/} The fault for Consumers Power moving ahead with remedial measures "without having provided the NRC with information sufficient for it to reach an informed judgment",^{154/} if such was the case, does not rest with Consumers Power. NRC Staff witnesses testified repeatedly that Consumers Power provided all of the information requested,^{155/} that the NRC Staff never expressed

^{153/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 31, paragraph 98.

^{154/} Id.

^{155/} Hood, Tr. 2715-18, 2689.

dissatisfaction with the information provided,^{156/} and that the "unprovided for" information now complained of was never requested at all.^{157/}

The NRC Staff admits that they never tried to stop the Midland remedial actions, but told Consumers Power that it could proceed at its own risk. They also admit that there is no evidence that Consumers Power was trying to shirk its responsibilities in connection with its remedial actions.^{158/} No support exists for the contention that Consumers Power exhibited a "less than complete and candid dedication" to providing the NRC Staff with information relevant to the remedial soils measures.

Manner in Which Applicant
Responded to Questions in Deposition

Paragraphs 99-100. No response.

Failure of Applicant to Discuss
Administration Building Settlement with NRC

Paragraphs 101-105. Consumers Power did not discuss the settlement of the administration building grade beam with the NRC Staff during the December 3 and 4, 1978 meetings. Mr. Howell testified that Consumers Power's dedication to full disclosure of all relevant information to the

^{156/} Id., Tr. 2727, 2724-25, 2720, 2688.

^{157/} Id.

^{158/} Id.

NRC Staff commits Consumers Power to disclose all information which is required to be disclosed by regulation and all information which is pertinent -- or, in the language of this contention, "relevant".^{159/} Consumers Power believed that the administration building information was neither required to be disclosed nor relevant.

All witnesses who addressed the issue agreed that Consumers Power was not required by regulation to report the settlement at the Administration Building.^{160/}

An extensive investigation into the settlement of the administration building grade beam was conducted before it was concluded that the problem was localized.^{161/} The investigators discovered that, after the placement of the original fill beneath the beam, the fill was partially excavated for a steam tunnel into the building.^{162/} After the soil excavation, one of the seven grade beams exhibited unusual settlement.^{163/} The fill beneath the failed grade

^{159/} Howell, Tr. 2927-28 and prepared testimony at pp. 15-16, following Tr. 2800; NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 33, paragraph 105.

^{160/} Keeley, Tr. 1315; Howell, Tr. 2927-28; Gallagher, Tr. 2356, 2405; NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 32, paragraph 101; NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 13, following Tr. 1560.

^{161/} Gallagher, Tr. 2556-57; Keeley, prepared testimony at p. 5, following Tr. 1163, and Tr. 1314.

^{162/} Gallagher, Tr. 2534-35; Kane, Tr. 4300; Keeley, prepared testimony at p. 5, following Tr. 1163.

^{163/} Gallagher, Tr. 2534; Keeley, prepared testimony at p. 5, following Tr. 1163.

beam was completely removed and replaced with lean concrete to provide a sound support for the foundation of the administration building.^{164/}

To determine whether the settlement problem was localized or had generic, plant-wide implications, Bechtel load-tested the two grade beams adjacent to the failed beam and took a number of soils borings around the building and in the surrounding area.^{165/} The load testing revealed no problems with the other grade beams.^{166/} Moreover, the borings taken beyond the administration building itself, in the area of the diesel generator building and the evaporator building, indicated that there were no soils problems in these outlying areas.^{167/} Mr. Gallagher testified that there was no reason to believe that this investigation was skewed.^{168/} Finally, the Bechtel investigation showed that all of the other structures on the site were reviewed; none exhibited any signs of unusual settlement.^{169/}

Based upon this investigation and the nature of the failure, Consumers Power and Bechtel concluded that the

^{164/} Id.

^{165/} Keeley, prepared testimony at p. 5, following Tr. 1163; Gallagher, Tr. 2561, 2556, 2592.

^{166/} Keeley, prepared testimony at p. 5, following Tr. 1163; Gallagher, Tr. 2592.

^{167/} Keeley, prepared testimony at p. 5, following Tr. 1163.

^{168/} Gallagher, Tr. 2557.

^{169/} Id., Tr. 2556.

grade beam failure at the administration building was a localized problem.^{170/} Although Mr. Gallagher, with the benefit of hindsight, concluded that the information seemed "clearly relevant" to him,^{171/} he admitted that he had no evidence that any of the persons at Consumers Power thought that the information was relevant.^{172/} Mr. Howell testified that, had anyone at Consumers Power thought that the grade beam situation was pertinent to the NRC investigations, they would have reported it.^{173/}

Paragraph 102. No response.

Paragraphs 103 and 105. It is difficult to discern the basis for the NRC Staff's conclusion that Consumers Power "withheld" the administration building grade beam information.^{174/} The charges of "withholding" imply a deliberate decision by Consumers Power not to tell the NRC Staff. However, all evidence before the Licensing Board directly contradicts such an implication. Mr. Gallagher stated repeatedly that he knew of no evidence that suggested that Consumers Power deliberately kept the information from

^{170/} Keeley, prepared testimony at p. 5, following Tr. 1163; Gallagher, Tr. 2556-7.

^{171/} Gallagher, Tr. 2342; NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 32, paragraph 101.

^{172/} Gallagher, Tr. 2405-06; 2408.

^{173/} Howell, Tr. 2927.

^{174/} NRC Staff prepared testimony on Stamiris Contention No. 1, at p. 14, following Tr. 1560.

the NRC Staff.^{175/} Mr. Keeley corroborated Mr. Gallagher's observation, affirming that the incident did not go unreported on purpose.^{176/} It was not then, he said, and never has been, the intent of Consumers Power to withhold information from the NRC Staff.^{177/} Mr. Howell confirmed this, testifying that he had never directed that the information should not be turned over to the NRC Staff.^{178/}

When asked, Mr. Gallagher did reply that Consumers Power's reporting of the administration building requirement did not "err on the side of conservatism".^{179/} However, he went on to explain that Mr. Cook's "conservatism" comment addressed neither the time period in question here (1977-78) nor the type of information at issue (non-safety related).^{180/} As Mr. Gallagher pointed out, Mr. Cook was not part of the company when the administration building problem occurred.^{181/} Moreover, the comment did not apply to information, such as the administration building, which is not subject to NRC reporting requirements. It was directed solely toward "report-

^{175/} Gallagher, Tr. 2337, 2412, 2595.

^{176/} Keeley, Tr. 1320.

^{177/} Id., Tr. 1319.

^{178/} Howell, Tr. 2979; NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 34, paragraph 105.

^{179/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 33, paragraph 103.

^{180/} Gallagher, Tr. 2429-30; see Cook, prepared testimony at p. 11, following Tr. 1693.

^{181/} Gallagher, Tr. 2429.

ing to the NRC under Section 50.55(e) of the Code of Federal Regulations, Part 10."^{182/} Mr. Gallagher testified that the remark was accurate in its proper context: "They [Consumers] have been conservative in reporting 50.55(e)'s in the past, especially where they are relative to safety related structures, systems and components."^{183/}

As Mr. Gallagher's testimony demonstrated, the settlement at the administration building is not really within the scope of Ms. Stamiris' contention at all: it is simply not "information relevant to health and safety standards with respect to resolving soils settlement problems."^{184/} First, the information was not relevant to health and safety standards: neither the settlement itself^{185/} nor the delay in the NRC Staff's learning of it^{186/} had any adverse health or safety impact. Second, the delay did not affect the resolution of the soils settlement problems: the NRC Staff identified the problems associated with the diesel generator building with sufficient depth and understanding, without the aid of the prior knowledge of the administration building failure.^{187/}

^{182/} Cook, prepared testimony at p. 11, following Tr. 1693.

^{183/} Gallagher, Tr. 2430; emphasis added.

^{184/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at p. 15, paragraph 57.

^{185/} Id. at p. 33, paragraph 103; Gallagher, Tr. 2555.

^{186/} Gallagher, Tr. 2556, 2571.

^{187/} Id., Tr. 2571.

Paragraph 104. No response.

Paragraph 105. See discussions in paragraphs 101 and 103 above.

Paragraph 106. As the NRC Staff admits, there is no evidence that Consumers Power thought the settlement of the grade beam at the administration building was significant enough to discuss with Dr. Peck, prior to informing the NRC Staff of the matter. There is no evidence that Dr. Peck was even informed before the NRC Staff was.^{188/}

Paragraph 107. There is also no evidence that Consumers Power thought the information significant enough to discuss with Dr. Hendron. Dr. Hendron initially testified that someone at Consumers Power had supplied him with the information.^{189/} However, he retracted this testimony and stated that he probably elicited the information through his own thorough questioning of someone who may not have realized the significance of the information.^{190/} The recognition of the significance of the information was, he added, his own independent conclusion.^{191/} Dr. Hendron remembered no other details of his conversation that day.^{192/}

^{188/} NRC Staff Proposed Findings of Fact and Conclusions of Law, at pp. 33 and 34, paragraphs 104 and 106.

^{189/} Hendron, Tr. 4075.

^{190/} Id., Tr. 4076-77.

^{191/} Id., Tr. 4077.

^{192/} Id., Tr. 4078.

Paragraph 108. The NRC Staff's conclusions in paragraph 108 are unsupported by the evidence. First, there is no basis for the conclusion that Consumers Power "felt that the information [on the settlement of the grade beam at the administration building] was significant enough to pass on to one of the DGB consultants" and accordingly discussed the matter with Dr. Hendron in October, 1978. This assertion assumes that (1) someone at Consumers Power thought the information relevant, and (2) that person, on their own initiative, sought out Dr. Hendron to discuss the matter with him. As shown in response to paragraphs 101 and 102, there is no evidence that someone sought out Dr. Hendron to discuss the grade beam failure with him. As shown in response to paragraph 107, Dr. Hendron refused to state that someone had volunteered the information to him. He thought it more likely that he had elicited the information through his own close questioning of people at Midland.

Second, there is no basis for the conclusion that Consumers Power "withheld" the information from the NRC Staff. As discussed in response to paragraph 103, it is misleading to claim that the information was "withheld", when there is no evidence at all that Consumers Power deliberately decided not to tell the NRC Staff of the problem.

Finally, this incident provides no support for the contention that Consumers Power has shown a "less than complete and candid dedication to providing information [to the NRC] relevant to health and safety standards with respect

to resolving the soil settlement problems." As discussed in response to paragraph 103, the information was neither relevant to health and safety standards nor necessary to the resolution of soils settlement problems. The fact that the NRC Staff did not learn of the settlement of the grade beam at the administration building earlier than it did provides no support for Ms. Stamiris' Contention No. 1.

Other Allegedly False Statements in FSAR

Paragraphs 109-112. No response.

Paragraph 113. There is no support in the evidence that any of Ms. Stamiris' examples, taken singly or as pieces of a "pattern", demonstrate a lack of dedication by Consumers Power to providing relevant information to the NRC Staff. Consumers Power's managerial attitude does not necessitate stricter than usual regulatory supervision.

IV. Stamiris Contention No. 2

Paragraphs 114-115. No response.

Paragraph 116. In her April 20, 1981 Answers to Consumers Power's Interrogatories, Ms. Stamiris did not list the Dow Contract as an example of financial and time pressures on soil settlement issues. Even if the NRC Staff's speculation as to the nature of Ms. Stamiris' beliefs is correct, the Licensing Board should not consider this example.

Paragraph 117. Mr. Howell testified that Dow has the option to withdraw from the contract with a payment to Consumers Power of one-half billion dollars, not one-half million dollars.

Paragraph 118. No response.

Early Submission of FSAR

Paragraphs 119-121. No response.

Choice of Remedial Actions

Paragraphs 122-124. No response.

Substitution of Materials

Paragraphs 125-129. No response.

Work on Diesel Generator Building
While Safety Issues Remained Unresolved

Paragraphs 130-141. No response.

Withdrawal of Contention 2(e)

Paragraph 142. No response.

Rapid Proceeding with Preparation for Preload

Paragraph 143. Mr. Hood was neither present at the November 7, 1978 meeting nor the author of the notes referenced in the contention. His characterization of the statements in the notes as they relate to any connection between the availability of a five-month preload period and Dr. Peck's statement is, at best, speculative and not entitled to any evidentiary weight. Consumers Power's Findings of Fact and Conclusions of Law at paragraphs 157-160 fully discuss this issue.

Paragraph 144. Ms. Stamiris' contention is that "root causes [were] not adequately investigated. Organiza-

tional deficiencies [were] not eliminated prior to proceeding with remediation." Mr. Hood testified that "investigations into the root causes of the soil settlement and the possible organizational deficiencies were not completed as of November 7, 1978 nor prior to proceeding with the DGB Surcharge."^{193/} He does not state that the root cause investigation was not adequate and he does not state that there were organizational deficiencies.

Consumers Power had determined the cause of the soil settlement prior to proceeding with the surcharge.^{194/} The consultant upon whom Consumers Power relied had sufficient root cause information to recommend the surcharge.^{195/} There is no evidence that any "organizational deficiencies" relating to the preload ever existed. The evidence shows that Consumers Power was not aware of any such "deficiencies" and that none actually existed.^{196/} Mr. Keppler testified that the quality assurance organization itself had always been adequate.^{197/}

The NRC Staff's finding that it reached no conclusion as to whether there was any adverse effect of soil

^{193/} Hood, NRC Staff prepared testimony on Stamiris Contention No. 2, at p. 13, following Tr. 2530; Emphasis added.

^{194/} See Consumers Power Proposed Findings of Fact and Conclusion of Law at p. 105, paragraph 146.

^{195/} Id. at p. 104, paragraph 144.

^{196/} Id., at p. 105, paragraph 146.

^{197/} Keppler, Tr. 1974.

settlement issues or compromise of pertinent health and safety regulations is in error. Mr. Hood testified that the NRC Staff has found no quality assurance problems with regard to the preload.^{198/} Therefore, there cannot have been any adverse effect of soil settlement issues or compromise of pertinent health and safety regulations.

Paragraph 145. No response.

Paragraph 146. As stated previously, there never were any "organizational deficiencies" with regard to the preload.^{199/} More importantly, there were never any organizational deficiencies identified with regard to Consumers Power, its management, its quality assurance program or Bechtel.

Paragraph 147. There is no evidence that schedule pressures influenced the preload program.^{200/} Dr. Peck testified that the "matter" which overrode any urgency caused by scheduling pressures was his desire to have all of the information he needed and to make sure that the remedy in fact fixed the problem.^{201/}

Paragraph 148. Mr. Keeley testified that not all of the root causes of the soils problem were definitely established until the answer to 10 CFR §50.54(f) Question 23

^{198/} Hood, Tr. 4435.

^{199/} See Consumers Power Proposed Findings of Fact and Conclusions of Law at p. 105, paragraph 146.

^{200/} Id., at pp. 110-11, paragraph 160.

^{201/} Peck, Tr. 3346.

was submitted to the NRC Staff. However, indications of the root causes were available in the late fall, 1978; those that could have had an effect on the remedial work were resolved before the remedial work began.^{202/}

Paragraph 149. Ms. Stamiris' contention is directed toward the "compromise of...health and safety" because of financial and time schedule pressures. There is no evidence in the record to support a finding that (1) Consumers Power did not "identify and remedy" root causes prior to the surcharge, or that (2) this occurred because of time and financial pressures and had an adverse effect on health and safety. Consumers Power Company never claimed there was "no need to consider root causes." The evidence demonstrates that prior to the diesel generator building preload, Consumers Power had determined the cause of the settlement, and the experts who recommended and supervised the preload had sufficient information concerning "root causes" for the preload to proceed.

Decision to Fill Pond Immediately

Paragraph 150. No response.

Paragraph 151. There is no evidence that the pond raising actually produced any difficulty with the interpretation of the piezometer readings. As Dr. Peck testified, a constant ground water level was not necessary for successful monitoring of soil settlement.^{203/} A stable ground water

^{202/} Keeley, Tr. 1242-43.

^{203/} Peck, Tr. 3252.

level would not have improved the accuracy of the readings.^{204/}

Paragraph 152. The "dry of optimum" issue centers around a technical disagreement between the NRC Staff and Consumers Power. In placing and removing the preload, Consumers Power relied on the advice of Dr. Peck, whom the NRC Staff regarded as one of the foremost soils experts in the country.^{205/} Dr. Peck believed that the piezometers had responded to the preload as expected.^{206/} Mr. Kane believed they had not.^{207/} This technical disagreement is irrelevant to the subject matter of Contention No. 2, the effect of time and financial pressures on the resolution of soils settlement programs. A detailed explanation of the "dry of optimum" issue will be set forth in Consumers Power's testimony concerning the technical adequacy of the diesel generator building preload.

Paragraph 153. Mr. Kane further testified that he knew of no errors in the soils or foundation engineering principles which Dr. Peck employed in his work.^{208/}

Paragraphs 154-156. No response.

Paragraph 157. The statements in this paragraph imply that Dr. Peck's readings and use of piezometers were

^{204/} Id.

^{205/} See Kane, Tr. 4421-22.

^{206/} Peck, Tr. 3241-42.

^{207/} Kane, Tr. 4443.

^{208/} Id., Tr. 4422.

incorrect. Dr. Peck testified that the pond level was raised "in order to avoid the complexities in measurement that would be introduced by pore-air pressure if the plant fill were to contain large amounts of air...." (Emphasis added.)^{209/} Dr. Peck testified that "you can have rather a[n] appreciable percentage of air and still get satisfactory readings...."^{210/} All you need is to have the free water surface above the piezometer sensor.^{211/} Once that is accomplished, the stand pipe piezometers can be used."^{212/} Thus, contrary to the NRC Staff's statements, stand pipe piezometers gave accurate readings for all practical engineering purposes.^{213/}

Paragraphs 158-159. No response.

Paragraphs 160-163. Paragraph 163 states that Dr. Peck's testimony "appeared to be self contradictory" with respect to the best sequence for raising the cooling pond. A careful reading of the testimony demonstrates that there is no contradiction.

The NRC Staff quotes Dr. Peck as stating that in November, 1978, he suggested that the best sequence would be to place the preload and then to fill the pond. Dr. Peck

^{209/} Peck, prepared testimony at p. 3, following Tr. 3211.

^{210/} Id., Tr. 3227.

^{211/} Id., Tr. 3227-28.

^{212/} Id.

^{213/} Id., 3231.

never suggested that. On cross examination Dr. Peck was shown some meeting notes^{214/} and asked if the notes accurately recorded the statement that "the best sequence would be to place the preload and then raise quickly the cooling pond water level...."^{215/} He affirmed that the statement had been accurately recorded.^{216/} On redirect, Dr. Peck gave his understanding of what the sentence meant, as he and the other consultants understood it.^{217/} According to Dr. Peck, even at the November, 1978 meeting he believed that the simultaneous placing of the preload and pond filling was as appropriate as placing the preload first.^{218/} There simply is no inconsistency.

Even if Dr. Peck actually believed that the "best sequence" was to first place the preload and then to raise the cooling pond level, the reasons for choosing this sequence are set forth in the minute notes: "...this sequence would allow the consolidation to take place [as] rapidly as possible. Otherwise the additional water entering the soil voids will have to be forced back out, extending the con-

^{214/} Peck, Tr. 3234; NRC Staff prepared testimony on Stamiris Contention No. 2, Attachment 3, following Tr. 2530.

^{215/} Peck, Tr. 3236; NRC Staff Proposed Findings of Fact and Conclusions of Law at p. 57, paragraph 160.

^{216/} Peck, Tr. 3236; NRC Staff prepared testimony on Stamiris Contention No. 2, Attachment No. 3 at p. 2, following Tr. 2530.

^{217/} Peck, Tr. 3464.

^{218/} Id.

solidation duration."^{219/} Obviously, therefore, the sequence issue only goes to the time required for consolidation, not any issue as to piezometer data interpretation. The sequence actually used increased the length of time the surcharge was in place. If schedule considerations were of the concern Ms. Stamiris alleges in this contention, then surely this sequence would not have been used.^{220/}

Five-Month Period for Preloading

Paragraphs 164-171. No response.

Failure to Grout Gaps, Cut
Consensate Lines and Break Up Mud Mat

Paragraphs 172-176. No response.

Paragraph 177. In order to place the condensate lines issue in proper perspective, one must differentiate between the condensate lines on the north side of the diesel generator building and the condensate lines on its south side.^{221/} The NRC Staff's proposed finding does not make this differentiation and therefore is misleading.

The first sentence of the finding should be corrected to read, in part, "that the condensate lines had been

^{219/} NRC Staff prepared testimony on Stamiris Contention No. 2, Attachment No. 3, at p. 2, following Tr. 2530.

^{220/} See Consumers Power Proposed Findings of Fact and Conclusions of Law at p. 108, paragraph 155.

^{221/} Id., at pp. 114-15, paragraphs 168-170.

cut outside the turbine building wall to prevent potential overstressing of the pipes during the preload."^{222/} Mr. Hood's testimony referred to the cutting of one of the condensate lines, not both lines.^{223/}

Paragraphs 178-183. No response.

Continued Construction
of Diesel Generator Building

Paragraphs 184-187. No response.

Early FSAR Submittal

Paragraphs 188-189. No response.

Paragraph 190. Ms. Stamiris' contention example, as filed, states that early FSAR submittal combined with inadequate review was an example of Consumers Power's financial and time schedule pressures. Her admission, "I am more concerned with the inconsistencies, not with the timing or not that they necessarily happened because of timing..."^{224/} conclusively proves that her contention as submitted is no longer advocated by her. Hence, the Licensing Board should disregard the first sentence of the NRC Staff's proposed finding.

Paragraphs 191-192. No response.

^{222/} Kane, Tr. 4404.

^{223/} Hood, Tr. 4199.

^{226/} See Stamiris, Tr. 4323

Reconstruction of Geometry of Area,
Proceeding with Preload, Selection of Least
Costly Alternative for Diesel Generator Building

Paragraphs 193-194. No response.

Paragraph 195. Any action taken by Consumers Power on the Midland Project is at Consumers Power's own risk.^{225/}

Paragraphs 196-201. No response.

Failure to Excavate Loose Sands

Paragraphs 202-205. No response.

Paragraph 206. The sands were not removed because the borings indicated that the sands were not classified as "loose sands."^{226/} Indeed, Attachment C to Stamiris Exhibit No. 1 states, "The attached borings and locations confirm existence of the sands, although the blow counts look very good."

Paragraph 207. As explained in detail in Consumers Power's Proposed Findings and Conclusions of Law, there were no loose sands.^{227/}

Appeals to NRC to Consider Financial
and Time Pressures as in "Seismic
Deferral Motion"

Paragraphs 208-210. No response.

^{225/} See Paton, Tr. 6616; see also Power Reactor Development Corporation v. International Union of Electrical Workers, 367 U.S. 396 (1961).

^{226/} See Consumers Power Proposed Findings of Fact and Conclusions of Law at pp. 132-34, paragraphs 206-210.

^{227/} Id.

Changes in Specifications
without Prior Approval

Paragraphs 211-214. No response.

V. Stamiris Contention No. 3

Paragraphs 215-218. No response.

10 CFR Part 50, Appendix B Criteria

Paragraphs 219-222. No response.

Settlement of Administration Building

Paragraph 223. No response.

Paragraph 224. Consumers Power has established that it conducted a viable investigation into the administration building's grade beam settlement and drew conclusions reasonable in light of the surrounding circumstances.

Following identification of the administration building grade beam settlement, Bechtel conducted an investigation to determine whether the soils problem was localized or whether it extended to other areas of the site.^{228/} The record shows that this investigation was conducted in a professional manner.^{229/} An investigation including load tests of the remaining grade beams, soils borings and sub-surface analysis occupying a month's time was made. The primary focus of the investigation was the most likely loca-

^{228/} Keeley, prepared testimony at p. 5, following Tr. 1163; Keeley, Tr. 1200; Gallagher, Tr. 2561.

^{229/} See Consumers Power Proposed Findings of Fact and Conclusions of Law, at pp. 91-98, paragraphs 182-86, 288-294.

tion for indications of a widespread problem -- the area in close proximity to the single collapsed grade beam. In addition, two borings were taken outside the area of the administration building, one at the site of the diesel generator building.^{230/} The investigation concluded that the cause of the problem was localized.^{231/} Consumers Power was aware of the results of the investigation before commencing construction of the diesel generator building in October, 1977.^{232/}

Even in hindsight, the NRC Staff was not in agreement as to whether the administration building grade beam investigation was adequate. Mr. Kane testified that the unique re-excavation and re-fill under the grade could have indicated that the soils problem was localized.^{233/} Mr. Kane also testified that the blow counts recorded during the grade beam boring investigation showed competent soils material.^{234/} Even Mr. Gallagher, who was very critical of the investigation conducted, admitted that his criticisms were made with the benefit of hindsight.^{235/}

Paragraph 225. No response.

^{230/} See, Id. pp. 182-83, paragraph 189.

^{231/} Keeley, prepared testimony at p. 5, following Tr. 1163; Consumers Power Proposed Findings of Fact and Conclusions of Law, pp. 182-85, paragraphs 288-293.

^{232/} Keeley, Tr. 1312.

^{233/} Kane, Tr. 4300-4301.

^{234/} Id., Tr. 4302-4303.

^{235/} Gallagher, Tr. 2569-70.

Additional Quality Assurance
Deficiencies, 1980-81

Paragraphs 226-227. No response.

Paragraph 228. The NRC Staff asserts that the deviation set forth in NRC Inspection Report No. 81-01 "resulted from NRC Staff dissatisfaction with the qualifications of the onsite geotechnical engineer. This engineer was replaced but the Staff remained dissatisfied." (Emphasis added.) This statement inaccurately represents the circumstances concerning the deviation noted in NRC Inspection Report No. 81-01.

Pursuant to its commitment to the NRC Staff, Consumers Power placed a geotechnical engineer at the Midland site in April, 1979.^{236/} The NRC Staff accepted this engineer as adequately qualified.^{237/} In December, 1980, this engineer left the Midland Project and was replaced. The deviation reported in NRC Inspection Report No. 81-01 in January, 1981 concerned the second engineer's qualifications. The second engineer was replaced by someone whose qualifications satisfied the NRC Staff.^{238/} Thus, the NRC Staff questioned the qualifications of only one engineer, who was replaced by an individual who satisfied its concerns.

Paragraph 229. No response.

^{236/} Gallagher, Tr. 1836.

^{237/} Id.

^{238/} Keeley, Tr. 1399.

Paragraph 230. Paragraph 245 of the NRC Staff's proposed findings does not discuss the SALP report.

Paragraphs 231-232. No response.

VI. Quality Assurance

Stipulations Regarding Propriety
of the December 6, 1979 Order

Paragraphs 233-240. No response.

Paragraph 241. More accurately, Mr. Keppler testified that he had "reservations" about the stipulation because he "was concerned that entering into the stipulation might result in a number of matters not being aired...."^{239/} Any misgivings Mr. Keppler had were related to his desire to make available to the Licensing Board the entire history of problems at Midland and were not related to the accuracy or content of the stipulation itself.

Paragraphs 242-248. No response.

Keppler Testimony

Paragraphs 249-250. No response.

Paragraph 251. Consumers Power has instituted the 100% overinspection of Zack work. All Zack management personnel at the Midland site had been replaced prior to the NRC Staff taking any action concerning the HVAC deficiencies.^{240/}

Paragraphs 252-258. No response.

^{239/} Keppler, Tr. 2127-28.

^{240/} Id., Tr. 2049-52.

Gilray Testimony

Paragraphs 259-261. No response.

Paragraph 262. The NRC Staff states that Consumers Power's initial response to 10 CFR §50.54(f) Question 23 was unsatisfactory. Actually, the NRC Staff determined that the detailed answers supplied by Consumers Power's response to Question 23 adequately addressed concerns about root cause identification and appropriate specific generic corrections of the problems.^{241/} Mr. Gilray testified that his initial reluctance to accept Consumers Power's response to Question 23 related only to a lack of documentation of actions taken to support its commitments.^{242/} Mr. Gilray concluded that Consumers Power's response to Question 23 was acceptable once he received verification of the effective implementation of the corrective actions.^{243/}

Marguglio Testimony

Paragraphs 263-266. No response.

Paragraph 267. The existence of the single quality assurance program (MPQAD) has promoted the interests of the Midland Project as a whole over and above any parochial interests.^{244/}

^{241/} Gilray, Tr. 3709, 3739-42.

^{242/} Id., Tr. 3712, 3835-36, 3763.

^{243/} Id., Tr. 3712-13.

^{245/} Marguglio, prepared testimony at p. 10, following Tr. 1424.

Paragraphs 268-273. No response.

Paragraph 274. Consumers Power has met the commitments of the referenced Immediate Action Letter.^{245/}

Paragraphs 275-279. No response.

MAC Report

Paragraphs 280-284. No response.

Paragraph 285. Mr. Bird also testified that some of the nine items concerning the display panel which were identified as open in the MAC Report actually had been closed out as of the time MAC conducted its investigation.^{246/}

Paragraphs 286-294. No response.

Paragraph 295. Mr. Bird described the measures taken by Consumers Power both before and after the MAC audit to improve the timeliness of the implementation of corrective actions.^{247/} Mr. Bird outlined the actions that had already been taken to assure that each of the specific items in the MAC audit were included within the regular MPQAD process for corrective actions.^{248/}

Paragraphs 296-297. No response.

Qualifications of Quality Assurance Staff

Paragraph 298. Mr. Bird agreed with Mr. Keppler's comments that the number of quality assurance inspectors

^{245/} Williams, Tr. 3027-28.

^{246/} Bird, Tr. 5134.

^{247/} Id., Tr. 5119-5200.

^{248/} Id.

committed to the civil quality assurance group might not, at that time, have been adequate to handle all planned future soils and foundation remedial work. Mr. Bird further testified, however, that Consumers Power was aware of this and was making arrangements to increase the number of inspectors. Mr. Bird also stated that he believed Consumers Power was appropriately staffed to handle certain remedial activities.^{249/}

Paragraphs 299-301. No response.

Paragraph 302. Mr. Gallagher criticized Consumers Power, as well as other nuclear construction permit holders, for misusing the ANSI N45.2.6 standard.^{250/} Mr. Gallagher opposed its waiver provision which permits the substitution of certain educational or experience requirements for inspectors if an equivalent level of competence can be demonstrated.^{251/} Mr. Williams disagreed with Mr. Gallagher's assessment of ANSI waiver provision. He believed the flexibility it provides is necessary. In contrast to Mr. Gallagher, Mr. Williams only questioned the rigor with which Consumers Power applied the waiver provision.^{252/} In further hearings on the subject, Mr. Gardner, an NRC Electrical Inspector, testified that he too believed the flexibility of the ANSI

^{249/} Bird, Tr. 1528-29.

^{250/} Gallagher, Tr. 2432, 2460.

^{251/} Id., Tr. 2432.

^{252/} Williams, Tr. 2207-08.

standard was necessary.^{253/} He had not found any instance where Consumers Power had abused the provisions.

Paragraphs 303-308. No response.

The Integrated MPQAD Organization

Paragraphs 309-311. No response.

Paragraph 312. Although Mr. Gilray noted the possibility of internal dissension in the new MPQAD organization, no evidence was presented that this problem actually exists.^{254/} Indeed, when specifically questioned about any dissension, Mr. Gilray testified that he knew of none.^{255/}

Paragraph 313. No response.

10 CFR §50.55(e) Reports

Paragraphs 314-320. No response.

Consumers Power Management Organization

Paragraphs 321-323. These findings, in part, are superseded by the MPQAD organizational modification implemented in December, 1981 - January, 1982.^{256/} At the hearings held to consider the modification, Mr. Keppler testified that the modified MPQAD organizational structure was the

^{253/} Gardner, Tr. 8094-95.

^{254/} Gilray, Tr. 3856-57, 3875.

^{255/} Id.

^{256/} See Tr. 6439-53, 6474-92, 6520-28, 6543-54, 6666-76, 6919-35, 6945-52, 6980-83, 6996-7008, 7021-99 and 7101-14.

functional equivalent of that which he approved in his earlier testimony.^{257/}

Paragraphs 324-326. No response.

Adequacy of FSAR Re-review

Paragraphs 327-333. No response.

"Patty's Log"

Paragraphs 334-336. No response.

Trend Analysis Program

Paragraphs 337-338. No response.

Paragraph 339. The NRC Staff has neglected to state Mr. Marguglio's conclusion concerning the adequacy of the trending analysis activities and the problem with reactor coolant pumps. Mr. Marguglio concluded that the problem with the reactor coolant pumps could not have been prevented with the knowledge available to Consumers Power.^{258/}

Paragraph 340. No response.

Paragraph 341. Mr. Keppler did not testify that the trending program is an example of an area where the NRC Staff is still not satisfied with Consumers Power's performance. Mr. Keppler only testified that further improvement in the trending program is warranted.^{259/} Mr. Keppler

^{257/} Keppler, Tr. 7090-91.

^{258/} Marguglio, Tr. 1652.

^{259/} Keppler, Tr. 2099-2100.

testified further that "we [the NRC Staff] feel that the trend analysis is still where we feel it ought to be."^{260/}

Paragraphs 342-343. No response.

Managerial Attitude

Paragraph 344. Mr. Keppler did not base his reasonable assurance determination solely on the decisive change in managerial attitude at Palisades within the last six months. For instance, Mr. Keppler testified that the special in-depth inspection conducted by the NRC in May, 1981 led him to conclude that the MPQAD was working well and had strengthened the Midland quality assurance program.^{261/}

Paragraphs 345-352. No response.

Future Implementation of Quality Assurance

Paragraphs 353-357. No response.

Paragraph 358. The technical adequacy of the corrective actions chosen to remedy the soils problem will be the subject of future evidentiary sessions. It must be remembered that Mr. Gallagher's concerns about soil placement were not limited to the Midland Project. Mr. Gallagher testified that there have been a sufficient number of difficulties with soils placement at other nuclear construction projects to warrant issuance of an Inspection and Enforcement

^{260/} Id., Tr. 2100.

^{261/} Id., Tr. 1883.

Circular to preclude this type of problem from arising in the future.^{262/}

Mr. Gallagher made several personal recommendations to ensure Consumers Power will properly implement its quality assurance program in the future. However, Mr. Gallagher gave unqualified support to the NRC Staff's conclusion that there is reasonable assurance that quality assurance and quality control programs at Midland will be properly implemented.^{263/}

Discussions of Ways Licensing Board Could Aid the Success of Quality Assurance in the Future

Paragraphs 359-362. No response.

Paragraph 363. The NRC Staff fails to note two important qualifications which Mr. Gilray made to his recommendation that Mr. Selby undertake special reporting requirements. First, Mr. Gilray explicitly stated that he was confident that Consumers Power will design and construct the Midland facility properly without Mr. Selby becoming directly involved with reporting.^{264/} Second, Mr. Gilray would condition Mr. Selby's involvement with reporting on a requirement that senior NRC management respond specifically to Mr. Selby's report.^{265/}

^{262/} Gallagher, Tr. 2462-64.

^{263/} Id., Tr. 2455.

^{264/} Gilray, Tr. 3878.

^{265/} Id., Tr. 3851-54, 3877.

Paragraph 364. No response.

The Effect of "Redlining" on NRC
Staff's Reasonable Assurance Conclusions

Paragraphs 365-374. No response.

Licensing Board's Conclusions
Regarding Quality Assurance Implementation

Paragraph 375. No response.

Appendix A

INDEX OF EXHIBITS

Intervenor Stamiris Exhibit No. 3, Attachment No. 15:
Order Modifying Construction Permit, dated December 6,
1979.

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))	

CERTIFICATE OF SERVICE

I, Robert G. Fitzgibbons, Jr., one of the attorneys for Consumers Power Company, hereby certify that a copy of "Consumers Power Company's Response to the NRC Staff Proposed Findings of Fact and Law for Partial Decision on Quality Assurance and Management Attitude Issues" was served upon all persons shown in the attached service list by deposit in the United States mail, first class, this 26th day of April, 1982.


Robert G. Fitzgibbons, Jr.

SUBSCRIBED AND SWORN before
me this 26 day of April,
1982.


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