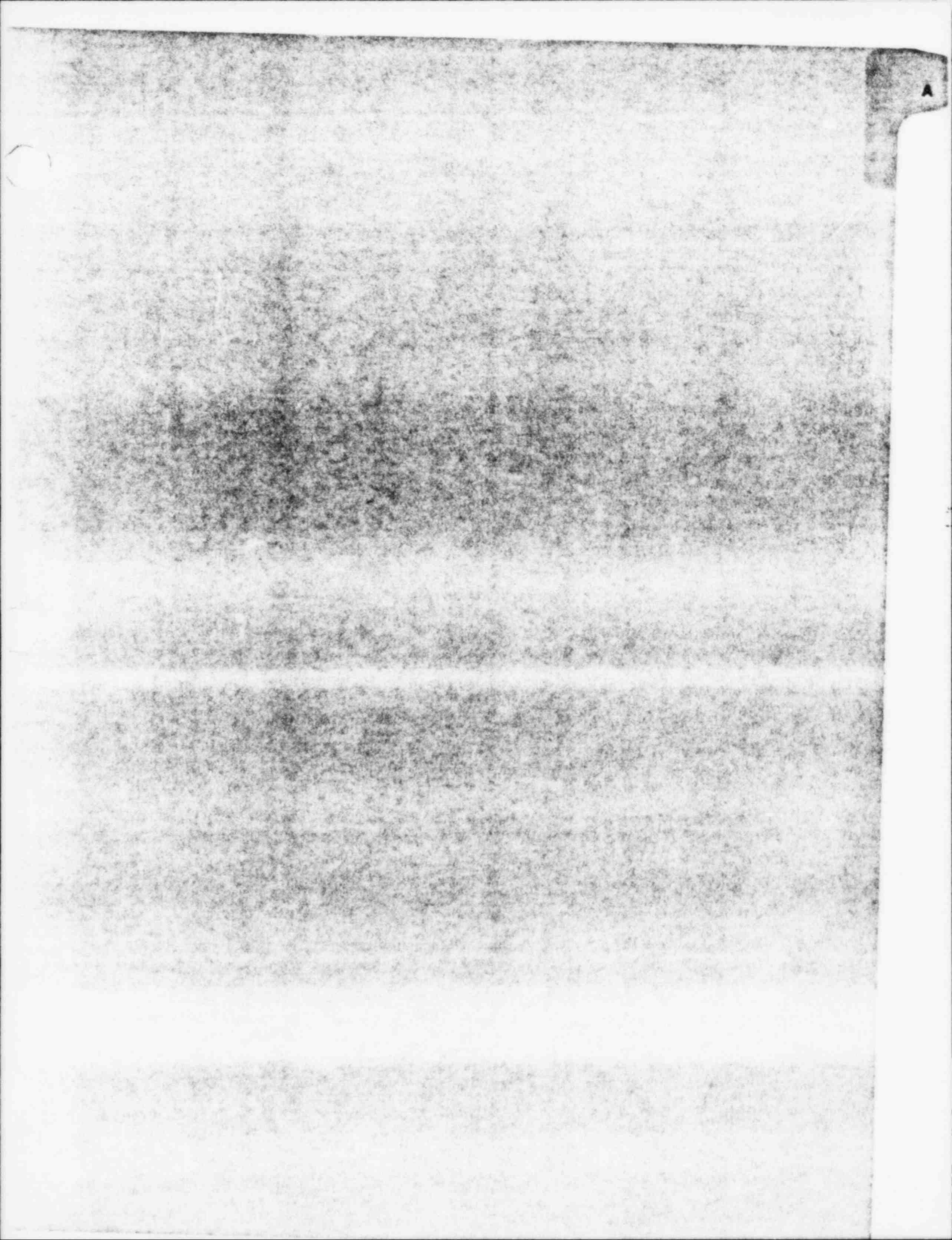


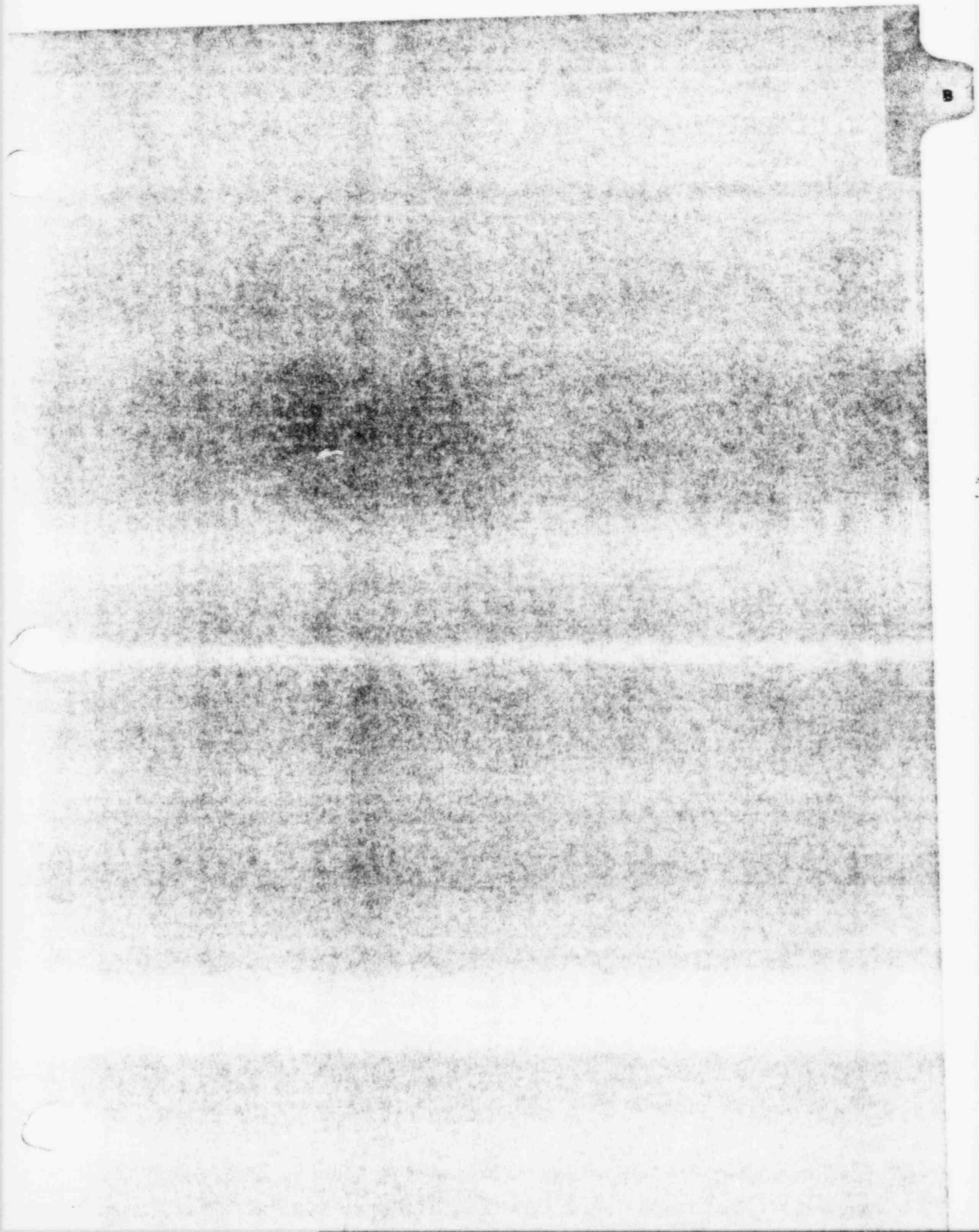
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- 1046 Miller begins his comments with respect to the above Board question [my recollection is that after hearing Miller statement, I had the impression that he really didn't know the answer]. I am not going to put a lot of this in the transcript because I don't think the issue is going to come up again.
- 1050 Paton response to the above Board question.
- 1057 Stamiris comment on the above Board question.
- 1075 Stamiris comments on the Q/A stipulation end and Marshall's begin.
- 1077 I comment that the points that Barbara Stamiris made in her lengthy discussion of the Q/A stipulation should be made on cross-examination.
- 1079 Lunch Break
- 1081 Bechhoefer discusses possible outcomes of the proceeding.
- 1083 Bechhoefer discusses the bases at which the Order may be sustained.
- 1085-6 Stamiris is asking procedural questions.
- 1093 DIRECT EXAMINATION OF DARL HOOD
- 1095 Testimony that supplements the prepared testimony.
- 1097 Prepared testimony of Darl Hood follows concerns the back-up wells and the boiler water storage tanks (note also supplemental testimony on the same subjects [in fact, I think the supplemental addresses only the wells])
- 1107 Cross-examination by Barbara Stamiris [I didn't summarize this cross because my recollection was that it was not heavy].

- 1113 Deckers' questioning seems to indicate that the Board was really only interested in construction activities that would have an adverse impact on proposed remedies - there was an inference there that the Board really didn't ask to hear about what we presented [I think CPC later developed on the record that we had their commitment wrong, that they did not commit to terminate all soils related activity this may not be right, but I think what they committed to was to not proceed with the proposed remedial measures - it will be developed in the transcript].
- 1123 Barbara still trying to illicite information about a basic change in the Staff position.
- 1125 Ellen Brown makes a statement attempting to clarify the record - concerns the Applicant's legal right to proceed with construction because the Order is not in effect.
- 1127 Another objection by Ellen on the same grounds that if there was a work stop it was voluntary.
- 1130 I am not summarizing Barbara's cross because she isn't making any progress.
- 1131 End of Stamiris cross of Darl Hood.
- 1132 Marshall's cross-examination.
- 1133 Farnell's cross-examination. He develops that the 12 back-up interceptor wells can be grouted if they don't work out properly.
- 1133 Board examination of Darl Hood.
- 1135 Darl explains his concern about the valve pits of the border water storage tank.
- 1137 Cowan questions (Ellen, I suggest that in your findings you pick out 1 or 2 of these points made by the Board with respect to Darl's

testimony) Cowan asks about whether the dewatering system resolves the liquifaction problem. Darl says we have not yet arrived at our position with respect to the adequacy of the permanent dewatering as a fix.

1138 Bechoefer questions.

1151 Darl explains why the Staff thinks the ^{Borated}~~boiler~~ water storage tank problem is connected with the soils problem.

1153 Redirect of Darl Hood by the Staff. CPC grouted the gap in the diesel generator building, but we have not accepted that fix.

1154 Stamiris cross continues throught 1156.

1157 Marshall cross.

1158 Farnell develops that one of the benefits of the installation of the 12 back-up wells is to provide imperical recharge data to help in the design and construction of a permanent dewatering system.

1159 Darl Hood is excused with respect to the above issue.

1160 Gilbert S. Keeley takes the stand.

1163 Keeley's testimony follows this page.

end of 7-7-81 Tram.

C

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7-8-81

all of C

1166 → 1300

On pages 1172 - 1175, Judge Bechhoefer rendered his ruling upon the proposed stipulation. The Board excepted paragraphs 1 and 2 in total, and regarded paragraph 3 of the stipulation only as the current position of the applicant and the NRC staff. Page 1178 and 1179, a discussion of a possible stipulation on the material false statement. Page 1182 - 1184, Barbara discusses

JX1

Page 1187, joint exhibit number 1, the QA stipulation is accepted into evidence. Cross-examination of Gilbert S. Keeley beginning on page 1193. Page 1194, Keeley discusses consumers responsibilities in this regard are not affected or decreased by the failure of the staff to make any comments or suggestions on these non-conformances. Note, this relates to the second paragraph of page 4 of Keeley's direct examination.

Page 1195, Keeley became aware of the settlement of the grade beam at the administration building in September of 1977. Keeley also told Gallagher that he first became aware of the grade beam failure in September of 1977.

Page 1196, the project engineer, Ron Bauman and Check Hunter, an engineering services individual were not aware of the grade beam failure until the diesel generator building settlement.

Page 1197, NRC was notified of the grade beam failure in December of 1978. More than 1 year after the actual settlement. Page 4, Keeley testimony states that in his opinion the problem with the administration building was an error by U.S. Testing Company. To prevent re-occurrence of such an error by U.S. Testing personnel, they were given further training to sensitive them to the need for

taking proper tests. Nonetheless, these errors occurred again in 1978 when Soils work was being conducted in the power block area.

Page 1199, Keeley states that the error at the Administration building occurred again because of (1) people not paying enough attention to detail and (2) because there was not a qualified geo-technical engineer on site 100% of the time supervising all of the soils activities. Keeley clarifies that it is both Bechtel and Consumers people who did not pay attention to details.

Page 5 of Keeleys' direct testimony states that Consumers concluded that the Administration Building settlement was a local problem.

Page 1200, Keeley admits that later Consumers discovered the problem at the Administration Building was not localized.

Page 1201, as a result of a July 1979 meeting between Consumers and NRC staff in Region III, that Consumers assumed that the Staff approved of the proposed remedial fixes. However, in October or November of 1979 when Consumers received additional questions from the Staff it became apparent to them that the Staff was indeed not satisfied with their fixes.

Page 1202, Keeley is not aware of any work other than the installation of a cable system to support the feedwater valve pits that was done after December 6, 1979 that would have been prohibited by the order had it been in affect.

- P. 1204 Keeley admits that the grouting of cracks around the diesel generator building technically was prohibited by the order.
- P. 1205 the excavation of a valve pit in front of the service water structure also technically was prohibited by the order. Keeley however, did not consider the major construction nor did it have anything to do with the remedial activities. Keeley states that there may have been some backfill soils activities around the boraid water storage tanks after December 6, 1979.
- P. 1207 Keeley did not list that activity in his original response to Bill's question as to what soils work had been done after December 6, 1979, because he did not think of it.
- P. 1207 there has been some excavation associated with the hydrogen tanks since December 6, 1979, again, Keeley did not list this in his original response to Bill's question because he did not think of it.
- P. 1209 Keeley states that from a legal standpoint, the hydrogen tank excavation would have been prohibited had the order been in effect.
- Footnote No. 1 to Exhibit 2 of Keeley's testimony. The word support does not include all of the soils that support each structure.
- P. 1210 Keeley extends the dates in Exhibit 2 to include any soils work not just major soils work.

Page 1212, Keeley spent approximately 20% of his time at the site between December 6, 1979, and March 1980. After March 1980, he spent about 5% of his time at the site.

Page 1213, the Licensing Board puts Consumers on notice that they would like to have the Bechtel project manager and the top Bechtel person in the joint QA organization available as witnesses for the Hearing.

Page 1214, cross-examination by Windell Marshall.

Page 1216, Drs. Peck and Hendron made the original recommendation for the wells.

Page 1220, cross-examination by Barber begins.

Page 1224, from July 1975 to March 1980 Midland QA people did not report to Mr. Keeley. They reported to the Vice President of Engineering and Construction pursuant to a requirement placed on Consumers by the NRC in 1972.

Page 1225, Keeley states that Mr. Bird reports directly to Cook not to himself.

Page 1227, Keeley admits that the organizational chart does not indicate whether Bird reports to Keeley or to Cook.

Page 1228, from 1975 to March 1980 the QA people reported to Mr. Howell, Vice President of Engineering and Construction.

Page 1229, Bechhoefer indicates that the Board is interested in finding out whether the officers of Consumers really thought that something was wrong.

Page 1233, the Board ruled that it would not permit questions on whether and why the applicant changed its position in respect to the QA breakdown.

Page 1234, Keeley states that he testified in 1974 in the Show Cause Hearing on clad welding.

Page 1237, Keeley states that the quality assurance program is better now than when he was QA Director. He lists those changes as getting more people involved, hiring more people, reorganizing, putting more people on the site and implementing an open inspection activity.

Page 1238, in Keeley's opinion, QA implementation after 1974 was better than QA implementation before the 1974 decision.

Page 1239, the Task Force on the soil settlement problem was formed in or around September 1978. The Task Force was made-up of Bechtel personnel plus consultants, Dr. Peck and Dr. Hendron, and Consumers personnel. The Bechtel personnel were Carl Weidner and Phil Martinez who is the project manager back then. The Consumers people on the Task Force were Tom Cooke, the project superintendent and Don Horn for quality assurance.

P. 1240 The Task Force's responsibility was to come up with recommendations for Consumers management. Mr. Howell was the individual who made the final decision on the recommendations.

- P. 1241 Keeley was not on the Task Force. The Task Force either made recommendations to Keeley along or to Keeley and Howell together. Keeley does not have the authority to approve any of the Task Force's recommendations without Mr. Howell's concurrence.
- P. 1242 Keeley states that he does not believe that the determination of a route causes was necessary prior to implementation of a remediation.
- P. 1243 the preload option was ~~formally~~ ^{formally} adopted in December of 1978.
- P. 1244 the removal and replacement option was ruled out in approximately late fall of 1978. Drs. Peck and Hendron were first retained around August or September 1978.
- P. 1245 routine monitoring for settlement of the diesel generator building began in July of 1978. Settlement in July of 1978 was compared to a benchmark.
- P. 1274 During the initial placement of the fill at the diesel generator building, proper tests were taken to determine whether the soil had been adequately compacted. After the diesel generator building settlement was detected, Consumers took some borings and those borings showed that the soil had not been adequately compacted.
- P. 1248 Dr. Peck once indicated that all soils would settle of their own weight. However, the settlement that had occurred at the diesel generator building was more than what would have happened if soil was settling due to its own weight.

- P. 1251 The Board puts Consumers on notice that they want Mr. Marquigilo to compile statistics on the number of QA personnel assigned to the Midland project and the number of QA inspectors starting in October of 1975 up until the present.
- P. 1254 Bechhoefer indicates that he wants the top Bechtel people in the new QA organization, because he wants to determine how to dispute if they arise are resolved. He notes that the integrated organization is atypical.
- P. 1256 it is common practice to build structure on field that has been recently replaced.
- P. 1257 Keeley discusses why the administration building settled. He states
& 58 it was due to inadequately compacted fill, not due to placing the footoj footing too soon after the fill was placed.
- P. 1261 Keeley states, "It is my opinion that if the fill had been compacted properly for the type of fill used and the tests run for that type of fill to show that it was placed near optimum moisture content, the problem would not have occurred."
- P. 1263 Keeley states that there were two separate sets of placement procedures for soil at the diesel generator building and at the administration building, but that there was one set of testing procedures for both buildings.
- P. 1265 Keeley reiterates that the significant question is the procedure used to compact fill not where the fill came from

- P. 1266 Keeley states that when the diesel generator building was 55% complete the removal and replacement option was not an economically sound one. The decision to not remove and replace the soils was also affected by Dr. Peck's recommendation that the best method of determining what settlement was going to take place is to surcharge the building and run a field experiment.
- P. 1267 Keeley states that economics enter all decision-making and that as a project manager he would be remiss if he did not figure factor economic costs and schedule effects into decisions.
- P. 1270 Keeley reiterates that the first formal survey of the diesel generator building was taken in July of 1978.
- P. 1271 Keeley cannot answer whether taking the first settlement measurement was when the building is 50% complete is the usual practice.
- P. 1273 Keeley states that he believes that the removal and replacement option was carefully considered before it was rejected.
- P. 1278 Stirimis Exhibit 1, a memo dated December 4, 1978, from Mr. Keeley and Mr. Cooke to the Midland File is identified for the record.
- P. 1282 Keeley states the purpose of a final safety analysis report. NRC approval is required when the changes between the PSAR and FSAR are significant.

- P. 1283 the determination of whether there has been significant change requiring an amendment to the PSAR or FSAR is a matter of engineering judgement.
- P. 1283 sometime before 1978 the building foundation for the diesel generator building was changed from a mat foundation to a spread footing. Consumers did not seek approval of this change from the NRC.
- P. 1284 Keeley does not know why NRC's approval was not sought. The present foundation design of the diesel generator building is a spread footing. There has been no changes to the spread footing as a result of the soil settlement problems.
- P. 1284 on page 2 of the Stimiris Exhibit No. 1, the document states will change FSAR to indicate random fill will be used.
- P. 1285 Keeley states that the random fill had already been used. It was not Keeley's normal practice to make changes the FSAR after the fact.
- P. 1287 dicussion of two other instances where the FSAR was changed after the fact to reflex what indeed had actually been done.
- P. 1288
& 1289 Keeley states that if the same people who are in charge of the original placement of the soils were in charge of the remediation, the settlement problem could be repeated. Keeley notes however, that Consumers is now required to have a qualified geo-technical engineer on site during all scils placement.

P. 1293
& 1294

Have a discussion of Keeley's response to Contention 2 supplemental item 8 parenthetically failure to excavate loose sands as committed to in PSAR.

P. 1294
& 1296

Keeley states that Consumers could not prove that the loose sands had been removed, therefore, it took action to determine if they had or had not. • The borings that were taken confirmed that the sands had not been removed. At the same time the borings showed that the sands were adequately compacted.

P. 1296

Keeley states that the existence of the sands did not in any way compromise the safety of the structures.

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1301-1501

Midland Hearing July 9, 1981

- P. 1305 Mike Miller states that Consumers is willing to go forth with the Hearings in August. Thus, the schedule for August will remain August 4 through August 14.
- P. 1309 The Chairman rules that by accepting paragraph 1 of the stipulation the Staff is satisfied its burden of producing sufficient evidence to require reasonable minds to inquire further.
- P. 1312 *indicates* Keeley states that Tom Cook from Consumers and Joel Nugent from Bechtel were both aware of the administration building problem and also involved in the start of construction on the diesel generator building. The content of the report on the administration building settlement was known prior to the start of construction on the diesel generator building. However the report was only in a draft form at that time.
- P. 1314 Keeley admits that it is significant to understand the administration building problem prior to construction of the diesel generator building. He adds that tests were done and borings were taken which showed that the administration building problem was localized.
- P. 1315 The first time Keeley mentioned the administration building settlement problem with anyone from the NRC was during the investigative interview with Mr. Gallagher in 1978. The grade beam problem was a non-~~Q~~^Q system.
- P. 1317 The grade beam problem occurred in 1977. The corrective action was completed in late 1977. The NRC was not notified of the grade beam problem until fall of 1978. Approximately 1 year after the settlement problem had occurred.

July 9, 1981

2

- P. 1318 Keeley believes his discussion with Mr. Gallagher was sometime in January or February of 1979. There was no requirement that a formal report be filed with the NRC.
- P. 1319 Keeley states that he gets perturbed about the insinuation that Consumers is keeping information from the NRC. He states this has never been the intent of Consumers Power Company.
- P. 1320 Keeley states that the information concerning the administration building settlement was never withheld from the NRC from purpose.
- P. 1325 & 1326 Keeley discusses the finding in NRC investigation report 81-01 that the geo-technical engineer on site was not adequately qualified. Consumers felt he was qualified because he had a lot of practical experience. The NRC felt otherwise and Consumers acquiesce to their wishes and changed the personnel. Keeley states that he doesn't have responsibility for the QA department and was not involved in the change of personnel. Both Consumers and Bechtel felt that the geo-technical engineer was qualified.
- P. 1331 To the best of Keeley's recollection, excluding the diesel generator building, the foundations for all other category I structures have not been changed from their original design. Keeley does not know the basis for the decision to change the original foundation of the diesel generator building from a mat foundation to a shallow spread footing.
- P. 1332 The Bechtel designer for the diesel generator building was the person who could explain the basis for the change and foundation.

- P. 1332 When Keeley got involved in the Midland project, there was not dewatering plan.
- P. 1339 Miller points out that in the Board's order of May 8, 1981, it denied on the grounds of relevancy, Stamiris' request for any documents relative to Amendment 3 of the FSAR which eliminated the original site dewatering plan.
- P. 1344 The surcharge for the diesel generator building was first implemented in January of 1979. The addition of a dewatering system in Keeley's opinion doesn't constitute a change in the remedial action plan for the diesel generator building. The dewatering plan was adopted in approximately February or March of 1979.
- P. 1345 The dewatering plan was decided on after the adoption of the preload plan. The decision to institute a dewatering system was a result of evaluation of soil borings which indicated a possible liquefaction problem. The fix for the service water pumps structure has been changed from its original design to a more conservative one. There has been no change to the original remedial plan for the tank farm. There, the borings indicated the fill was in good shape. Thus, Consumers decided to fill the tanks with water and monitor settlement. It is Consumers opinion that the settlement of the ring beam is a result of design problems and is not directly related to soils remedial activity. Diesel oil tanks are not part of the tank farm and there has been no change in the remedial action planned for those tanks. The remedial plans for the underground utilities are currently being evaluated.

- Ant*
- P. 1347 The fixes for the ~~the~~ building and the feedwater isolation valve pits have changed from their original design.
- P. 1351 Keeley states that as far as economics are concerned, the removal and replacement option is feasible. He notes however that the staff would have to review and approval such an option.
- P. 1357 Cross-examination of Keeley by the Licensing Board begins.
- P. 1357 Keeley states that Consumers first knew that U.S. Testing had made an error in degree of compaction of the fill in September or October of 1977.
- P. 1358 Keeley states that when the diesel generator building construction began, Consumers felt that the administration building problem was localized.
- P. 1359 Keeley agrees with the statement found on page 21 of an attachment to the staff's testimony to Contention 21 which states in affect that the field beneath the administration building was compacted and tested to the same requirements as materials supporting the safety related structures. Consumers was aware of the 12 deficiencies listed on page 17 of this document when the decision was made to proceed with construction of the diesel generator building.
- P. 1361 Keeley describes what happens after CPC audit report or non-conformance report is issued. Historically, Consumers has reviewed all "use as is." Keeley is contract manager for Consumers.

- P. 1362 Keeley describes Bechtel's contractual responsibilities to design and construct, and provide first line responsibility for quality control of the plant.
- P. 1363 Bechtel has a contractual duty to design and construct the plant in accordance with the comments made by Consumers to the NRC. If Bechtel has an engineering screwup, Bechtel is contractual obligated to re-engineer at its own cost.
- P. 1364 The contract between Bechtel and Consumers is a best efforts contract. The decision to go ahead with construction on the diesel generator building was made by Tom Cook, the project superintendent and Keeley.
- P. 1365 Keeley cannot remember off hand an example of when Consumers opposed a Bechtel decision. Don Miller is the highest ranking Consumer's supervisor who's primary place of business is on site. Leo Davis is the site manager for Bechtel. Don Miller reports to Keeley.
- P. 1366 Keeley states that he believes Consumers has the adequate authority and muscle to assure itself that it gets what it wants.
- P. 1367 Keeley describes the duties of the geo-technical engineer on site.
- P. 1368 The geo-technical engineer gives advice to the QC people. The QC group cannot report directly to the site manager. They report to a separate quality control supervisor group in Ann Harbour in San Francisco.

- P. 1369 Keeley states that he doesn't think the problems were caused by the interfacing of various subcontractors but rather they were caused by not having qualified geo-technical engineer on site 100% of the time to monitor, observe and give guidance.
- P. 1372 If there is ever a disagreement between Consumers and Bechtel, Consumers has the last word on the issue.
- P. 1373 Exhibit 1 to Jim Cook's testimony shows that he shows both as Vice President of Midland as well as Vice President of Engineering and Construction. Keeley reports directly to Cook as Vice President of the Midland office.
- P. 1375 Keeley states that the fact that he reports directly to Cook is somewhat different from the last sentence in the first paragraph of his testimony.
- P. 1376 Keeley states that Consumers QA department conducts not only audits of its own direct contractors but also audits the subcontractors of those contractors. It also does surveillance of these various activities. U.S. Testing was a subcontractor of Bechtel. The grade beam settlement was originally detected visually.
- P. 1377 If someone had not visually noticed the settlement of the administration grade beam, it settlement would have been picked up by subsequent monitoring. The tests conducted on the borings taken from the administration building area demonstrated that the soils had not been adequately compacted.

- P. 1378 Consumers felt that taking 2 borings and by applying load to the other grade beams was an adequate approach to determining the extent of the settlement problem.
- P. 1380 The use as is disposition of a non-conformance doesn't necessarily mean that some specification has not been compiled with fully.
- P. 1381 If the supplier doesn't perform in accordance with the requirements placed on it, a non-conformance will be written either by Bechtel or by Consumers. Historically, Consumers has reviewed all use as is dispositions and if they have disagreed with the disposition, they have changed it.
- P. 1382 There is no requirement to inform the NRC of a change represented by a use as is disposition.
- P. 1383 Keeley briefly discusses what a field change request is. Such a request is initiated by construction and it must go back to the engineering group for their approval. The engineering people who would have to approve the field change request are the same people who would have to approve or disapprove the disposition of a non-conformance report.
- P. 1384 If the soil beneath the diesel generator building had been adequately compacted it would have been in what is called the secondary consolidation which is basically a linear relationship vs. time.
- P. 1385 & 1386 The Task Force's three recommended actions noted on page 7 of Keeley's testimony were implemented jointly by Consumers, Bechtel and its consultants.

- P. 1387 Keeley guesses that Consumers has taken approximately 250 borings. Mr. Tedesco's October 14, 1980. letter was not the first indication that the staff had a problem with the seismic standard. However, it was the first time that the staff came out with a definite position on the matter.
- P. 1388 There was a December 1977 report which dealt with the administration building and was provided to the staff in January of 1979. *Ebas*
- P. 1390 Redirect of Keeley. The voluntary work stoppage committed to by Consumers on page 13 of Keeley's testimony dealt only with the remedial work not with all other soils activities. In Keeley's opinion, Consumers has lived up to its commitment not to proceed with work on the remedial activities. This commitment by Consumers was made during meetings on February 27 and 28.
- P. 1391 Keeley believes that the installation of the cable system beneath the feedwater valve pits took place before February 27 and 28. He cannot remember whether the grouting of the footers underneath the diesel generator building occurred before or after February 27 or 28. However, he notes that the NRC suggested that it would be advantageous if they grouted under the footers. No one from the NRC has ever told Keeley that Consumers has not lived up to its February 27, 1980, promise not to do any remedial soils actions without the staff's approval. He notes however the disagreement between the staff and Consumers over whether the boraidded water storage tanks involved soils remedial work. Despite this disagreement, Consumers has agreed to not proceed with any actions in the tank area until the NRC approves its action.

- P. 1393 No one from the NRC staff ever complained to Keeley that Consumers should not have done any of "these items" after December 6, 1979. "These items refer to those soils activities which were conducted after the order, yet which would have been prohibited by the order had it been in affect."
- P. 1393 A further example of when Consumers has disregarded advice of Bechtel
& 1394 concerns the decision to take further borings in order to test the surcharge on the diesel generator building.
- P. 1394 } In accordance with a contract provisions between Bechtel and Consumers with respect to notifying Bechtel of improperly done work, Bechtel has been notified of the improperly placed soils.
- P. 1396 Recross by Bill. Keeley did not participate in any discussions concerning the qualifications of the on-site geo-technical engineer.
- P. 1397 He is not aware of the specifics of the qualifications that the NRC believes the geo-technical engineer should have.
- P. 1398 Keeley's responsibility as project manager is to review the remedial measures that is the technically aspect of the remedial measures. Keeley states that it is the responsibility of the QA department to review the qualifications that the geo-technical engineer. He depends on that department to get involved in the details of the qualifications.

- P. 1399 Keeley states that he has no responsibility to review the details of the geo-technical engineer's qualifications. In response to a 50.54 F Question Consumers committed to having a qualified geo-technical engineer on site. Keeley reiterates that one of the causes of the soils settlement problem was the failure to have a qualified geo-technical engineer on the site.
- P. 1401 Recross by Marshall. The subcontractor, Canonie, furnished the fill.
- P. 1407 Recross by Stamiris. Keeley recalls that an early 50.55 E document listed the removal and replacement option as such but he does not recall any indepth discussion or evaluation that option in either a 50.55E document or a 50.54F submittal.
- P. 1408-9 ~~P. 1408~~ During the surcharge program, the NRC Staff and Consumers had lengthy discussions. The preload was removed in August of 1979. Consumers received no negative comments from the NRC with respect to its plans to remove the surcharge in August.
- P. 1411 The cooling pond was filled with the exception of approximately 4 feet prior to the surcharge and then at Dr. Peck's recommendation it was filled the rest of the way.
- P. 1420 Recross by Bechhoefer. Consumers voluntary work stoppage was not intended to and did not cover all the work sort to be stopped by Items 1A and 1C of the December 6, 1979 order.

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P. 1422

Consumers voluntary work stoppage in essence covered the Items specified in 1B of Part 4 of the modification order.

Marguglio

~~143~~ → 1501

SUMMARY OF TRANSCRIPT - MIDLAND

- 1423 [Ellen Brown has summarized this transcript (July 9, 1981 from the first page (1301) up to 1423].
- 1423 BENJAMIN W. MARGUGLIO was called as a witness. He is director of environmental and quality assurance.
- 1424 Marguglio's 42 page testimony and 11 attachments are admitted into the record - actually what happened is that his 42 page testimony was admitted at this point and I think the 11 attachments comprised Volume 2 of July 9, 1981 - the attachments to his testimony are not in Volume 1 of July 9, 1981.
- 1425 Stamiris starts her cross examination by asking how the new MPQAD program, instituted in 1980 improves Consumers responsibility over Bechtel. Marguglio responds that prior there were two quality assurance departments for the Midland project, one was Bechtel, one was Consumers. That Bechtel had primary responsibility and Consumers had an overview and that the new department 1426 is staffed largely with persons employed by Consumers and the quality role is now carried out with Consumers' interest always in mind.
- 1426 Barbara asks how the overview responsibility operated in the old organization. Marguglio does not respond to that question but says that the integrated organization is continuing to perform over inspection. Marguglio says he thinks the program prior to 80 was affected and inet Appendix B.

effective

- 1427 Absolutely not Appendix B.
- 1427 Marguglio "guestimates" that the plant was 60% complete in 1980 and closer to 70% "today".
- 1428 Barbara reads from criterion 1 of Appendix B and asks Marguglio if the new MPQAD meets that criteria better than before. Marguglio gives his standard answer that we met it before but the MPQAD "best" satisfies that criterion.
- 1430 Barbara asks him about trend analysis which he refers to on page 35 of his testimony. Marguglio responds that it may well be the best trend program in the industry.
- 1430 Marguglio says the trend program that we have today was not as sophisticated between 1975 and early fall of 1977 when the soils of the diesel generator building were placed. There were 12 non-conformance reports written on the subject of soils placement over that span of time.
- 1431 Those non-conformances were for different types of non-conformances at widely differing time periods and Marguglio didn't think that trend program could have detected the potential for the problem which was ultimately discovered in 1978. Soils testing should have caught the problem.
- 1431 Marguglio is not sure he is aware of what pipe ~~width~~ restraint *whip?* *or main* *box* problem in 1980.
- 1432 Barbara continues to interrogate Marguglio about this pipe ~~width~~ *whip* problem, but she doesn't have the relevant document.
- 1433 Marguglio doesn't respond saying he would prefer to have a document in front of him. She asks him did the trend analysis

work with respect to that problem. Marguglio says trend analysis did not reveal that problem but he doesn't know that it could have, he is just not familiar with it.

- 1433 Barbara a two page document entitled "Management Directive Action Request Report" dated August 11, 1980.
- 1435 Marguglio indicates he wants to change his previous answer about the trend program, whether the trend program could have detected or prevented the condition referenced in this report. He says the answer is no. This was a case where the supplier found a problem with his product, he published a Part 21 report notifying his customer Bechtel of the problem. Consumers concern was that Bechtel did not pass it on to Consumers. A trend program would not have picked that up.
- 1436 Judge Decker says why can't a trend program pick up a problem of apparently faulty pipe constraints - is it because there were never any inspections which found anything wrong? Marguglio response that the condition was not a repetitive type condition - the trend program does not have the capability of identifying problems that exist at supplier facilities (with limited exclusions) and there was not a repetition of the problem.
- 1437 In response to Judge Cowan's question Marguglio says he does not know whether the supplier had a trend program.
- 1437 Barbara now switches to another problem which she thinks is repetitive and that is rebar. She refers to a report under

Fiorelli's signature that came out October 18, 1979 as of October 1, 1979.

1439 Marguglio admits that the steel imbedment problem is a recurring or repetitive problem. Barbara asks whether the trend analysis worked with respect to reinforcing rebar. Marguglio says he researched the problem prior to joining the company on January 1, 1977. He concluded that the problem was adequately identified. Then he says he doesn't really know whether the problem was identified through the trend program or outside the trend program. Then he starts talking about how the problem was solved.

1440 Barbara asks whether it took a year or more between 1975 and 1976 to discover the problem. Marguglio doesn't answer the question but says that with tens of thousands of reinforcing bar being imbedded in concrete. Some are going to be missing and in 1976 management became convinced that it was a problem.

1441 Marguglio admits that there were 63 number 6 rebar missing in the building. But he says to make sense out of that he would have to know over what period of time and in what areas of the building and what percentage of the total number to be installed this was.

1442 Marguglio again wants to talk about what was done to correct the problem. He says "that's the focal point". Barbara is obviously trying to get him to talk about whether the trend analysis discover these problems and either doesn't know or won't talk about it.

1443 In response to a Board question about whether you correct the non-conformance or you correct the program, the witness says we correct the way in which the design was communicated to the crafts person and that's sort of programmatic as contrasted to simply fixing the hardware. The problem was that the design was difficult to understand and was being misinterpreted by craftspersons, so they simplified the design.

1443 Barbara asks Marguglio about Zack. She is still pursuing a line of questioning where she considers problems to be repetitive and is asking whether the trending program picked them up. She asked him to tell what he knows about the problem.

1444 He says that the ventilation system was safety related. She asked him to say why the problem was repetitive. He answers that it was largely one of welding non-conformances. The welds were not passing the inspection process. And yet the welding activity was allowed to continue contemporaneously with the efforts of Zack and Bechtel to obtain process corrective action. This happened before and after the NRC knew about it.

1445 Did your trend analysis program work with respect to the Zack ventilation problem. Marguglio says it did work - it identified the fact that we had a problem with welding. It did not identify some other procedural problems, it wasn't intended to [by this I think he is referring to the fact that they continued to do the work despite the unresolved non-conformances]. She asked why the NRC was not informed

until one of the workers from the site took it to the NRC. Stamiris then asks "how did the NRC first find out about the Zack ventilation problem" and he says I don't know. On the same page he says that the NRC resident may have known there was a 5055E report prepared. "My understanding that there were allegations made directly to the NRC concerning information that was not available to either Bechtel or Consumers.

1446 The craftsperson who reported this to the NRC saw some things "on the floor" that didn't meet his approval but Marguglio did not know why he didn't offer that information to Bechtel or Consumers.

1447 Miller objects to getting into "the details of these non-conformances" because he thinks we are going beyond the scope of quality assurance in this proceeding.

1447 I tell the Board for the second time that the inspection report concerning the report to the NRC concerning the Zack matter is available and we'll get it if the Board wants it.

1448 Barbara and Judge Bechhoeffer indicate that they are only interested in this matter (Zack) insofar as it bears on how quality assurance or quality controlled programs are presently working.

1449 Barbara asks about the small bore pipe problem which she also thinks is a repetitive problem. This was identified by Keppler in May of 1981. Marguglio says in the context of a trend analysis program he does not consider this to be a repetitive problem because it was no earlier indication of the problem.

"The trend analysis program is based on having indications of a condition that is repeated".

1450 The problem was obviously repetitive but we didn't discover it until the NRC came for their inspection in May of 1981. Some small bore piping is safety related. Marguglio cannot tell how many small bore pipes are affected by the problem.

1451 She asks him about reactor pressure bolts problem or anchor bolt problem. The history goes back to 1975. Marguglio says that is not a repetitive problem. "Because the bolts were delivered", and the first indication of a problem was when the actual failure occurred. Barbara seems to admit that it is not a repetitive problem.

1452 Marguglio indicates that the majority of problems are corrected within six months (in response to a Stamiris question about how long it takes a trending analysis to find a problem).

1453 She asks Marguglio whether he thinks the first 70% of the plant was built with a good quality assurance program. He says it has met requirements, it has been adequate, it was at least average. There is a great deal of redundancy in the program (he related this to inspection and they are tested and retested and Consumers has a system of in-process inspection which continues on after the plant goes operational).

1454 Marguglio thinks the program should be assessed on the basis of (1) whether the problems are caught and correct and (2) on the basis of ability to prevent problems.

- 1456 Discussion of scheduling of witness. Kimball, etc.
- 1459 Barbara is having trouble with her questions. She mentions trend analysis, soils problems in quality assurance "are still going on". Does that indicate that trend analysis has not resolved this problem since 1975 (not too good a question). Marguglio responds that the frequency of non-conformances is greatly reduced and he would not expect it to be defect free. Miller offers to help Barbara by marking something as Stamiris Exhibit 2 for identification.
- 1460 The document is a little screwed up. Barbara says it consists of 7 pages for us and 9 pages for the reporter. Miller offers that the first page is headed "Audit Finding Report", the date is July 9, 1980. The signature is Donald E. Horn.
- 1461 Judge Bechhoeffer marks "the whole bunch of these documents" as Stamiris Exhibit 2 for identification.
- 1462 I object to questions about a document that is not in evidence.
- 1463 Stamiris Exhibit 2 is received in evidence. Barbara asks a question about deficiencies and testing for relative density in 1980.
- 1464 She refers to the recommended corrective action, particularly Number 2 "Project engineers should determine if evaluation by the geotechnical engineer rather than automatically retesting is an appropriate means of dispositioning the suspect test indicator which the 105% criterion is supposed to be". She asked, is this the same geotechnical engineer that Keely said should have been on the site all the time. He doesn't know.

- 1465 There is confusion between her questions and his answers.
Barbara's getting screwed up on her questions.
- 1467 Barbara is still using her Exhibit 2.
- 1468 Marguglio responds that he thinks Horn might have meant to say
in the recommended corrected action war to provide
clarification of the intent of this section or to do it like a
specification. He doesn't know the ultimate resolution.
- 1469 Miller objects because Marguglio has indicated he does not know
the specifics of the matter on which Barbara is asking him.
- 1469 Judge Decker reminds Miller that Mr. Keely stated that he
relied on the quality assurance organization to assure that all
the discrepancy reports were properly closed out and that we
have a discrepancy report in front of us and we have Mr.
quality assurance and he doesn't understand why the question is
improper.
- 1470 Miller backs off.
- 1471 Stamiris repeats the question. If this was the only corrective
action that is stated here, would you believe that this indeed
was a corrective action. Does this really in itself constitute
a corrective action. Is this all there was to it.
- 1472 Marguglio attempts to explain away the confusion. He says
first systematically there is a system that is in place which
forces the response to the initial [non-conformance] report.
That response comes from the individual designated as being
responsible for the activity which appears to be deficient.
That person has a certain amount of time to respond. When that

report is accepted by quality assurance (1473) and the quality assurance acceptance is a two-step process, first by means of an analytical assessment and then by means of a reaudit to verify that what was said to be done was in fact done and did in fact have a positive impact on the situation. When that assessment is made the audit report is finally closed out. Second, if the recommended corrective action is inappropriate, no one is bound by the recommended corrective action. So there are follow-up techniques which will straighten that matter out.

- 1473 Barbara abandons that line of questioning and asks him whether as the head of quality assurance he is concerned that soils problems are still going on in 1980. He says yes, he would like to 0 non-conformances.
- 1475 Miller and I both object to Barbara's questions.
- 1476 Board also doesn't know where she is going
- 1477 Marguglio is not aware of any obligation on a standing basis of sending reports to Darl Hood.
- 1478 Miller objects to any questions about SALP.
- 1480 End of cross-examination by Barbara Stamiris, beginning of cross by Marshall (on Marguglio).
- 1481 End of cross by Marshall, beginning of cross by the Staff. Marguglio is glad to clarify the matter of who first reported the Zack matter to the NRC.
- 1482 I mentioned the \$38,000 civil penalty.
- 1483 Was there more than one Zack matter. Marguglio says our initial awareness was with regard to the quality of components

which were being received from the Zack Chicago fabrication facility and with regard to the welding problems that were occurring during installation. There were other conditions that were occurring with which we were not initially familiar and I think that some of the allegations had to do with some of these other conditions.

- 1484 He thinks in about September 1980 that he learned that a Zack quality control inspector made the report to NRC. Then he changes that to 1979.
- 1485 I asked Marguglio - did you intend to indicate by your previous testimony that you did not know who made the report to NRC.
- 1486 He answers it was my understanding that a report was made to the NRC, maybe not a report, but an allegation was made to the NRC by an employee of Zack - I don't know his name.
- 1488 I asked him what Turnbull ever had to say about the trending program. Answer (1) that some additional refinements would be appropriate and (2) 1489 the other part was a discussion in relation to the recent NRC inspection of May 18 through 22 - those particular comments were that an increase in the number of individual non-conformances should not constitute a trend when there has been a corresponding and proportionate increase in the work activity level and the volume of work activity. Turnbull works for Byrd and Byrd works for Marguglio.
- 1492 I asked Marguglio has he ever seen any memo written in the year 1981 by Turnbull concerning trend analysis. Turnbull's note indicated that he needed a definition of what constituted a

trend upon which some corrective action would be taken.

Turnbull thinks that absent that definition those who are at the lower organizational levels "exercise this responsibility to a varying degree depending on a lot of circumstances". [I think that is Marguglio's way of saying they don't know what they're doing]. - and Turnbull wants to provide a greater degree of standardization.

1494 The Board indicates an interest in the document that I have been interrogating about even I clearly indicate my intent not to produce it [in fact at the time I did not have it, I had excerpts from it].

1495 The Board asks Marguglio about the fact that the civil QA group is not adequately staffed with sufficient experience capability in numbers for the planned complex remedial soils and foundations corrective action (this is page 9 of the attachment 2 to Kepler's testimony - concerns the May 1981 inspection). The Board asks for information as to numbers of QA employees, QC employees and reiterated that those involved with soils work should be identified.

1496 Marguglio intends to embark on a course of reading a lot of numbers in response to the Board question.

1497 I interrupt to suggest that based on what the witness has done so far, his report is going to take between 20 and 25 minutes and that it would be much more efficient for the applicant to prepare a written report that could be reviewed by everyone.

1501 End of transcript.

E

7-10-81 all of E

1502-1735

- testimony) Cowan asks about wh
liquifaction problem. Darl says we have not yet arrived at our position
with respect to the adequacy of the permanent dewatering as a fix.
- 1138 Bechhoefer questions.
- 1151 Darl explains why the Staff thinks the boiler water storage
tank problem is connected with the soils problem.
- 1153 Redirect of Darl Hood by the Staff. CPC grouted the gap in
the diesel generator building, but we have not accepted that fix.
- 1154 Stamiris cross continues throught 1156.
- 1157 Marshall cross.
- 1158 Farnell develops that one of the benefits of the installation
of the 12 back-up wells is to provide imperical recharge data to help in
the design and construction of a permanent dewatering system.
- 1159 Darl Hood is excused with respect to the above issue.
- 1160 Gilbert S. Keeley takes the stand.
- 1163 Keeley's testimony follows this page.
- 1502-09 Discussion of scheduling.
- 1509 John Ruckner's is the project manager for Bechtel, and Marion
Deitrich is the ranking Bechtel employee in MPQAD. I make another
pitch to start the subject of dikes immediately after Howell for
the August session. Miller didn't say it here, but he said it later
that Hendren wants to testify on Friday, August 7.
- 1511 Discussion of the memo by Turnbull, where he indicates some
unhappiness about ~~training~~ analysis. I say that I did not intend
to offer it in evidence.

trending

1516 BENJAMIN W. MARGUGLIO TAKES THE STAND. CPC exhibit No. 1 is marked for identification. I think this is the exhibit in response for the Board request to show how many Q/A people there were compared to how many construction people, etc.

1517 Marguglio describes the document.

1518 The document is received in evidence.

1520 Board examination of Marguglio. Marguglio describes three types of training employees get.

1521 Marguglio says "We probably have one of the most detailed certification processes in that regard in the industry" (that regard I think is with respect to skills training). Marguglio says "It is customary to qualify and certify a civil inspector on the basis of a couple of demonstrations and a couple of skills relating to civil activity. In our company, we certify a civil inspector to each individual civil inspection process for which he is going to be employed". [I'm sure Gallagher would have a comment about this.]

1522 Marguglio indicates that an individual inspector would carry-on activities only in the category for which he was certified.

1523 Marguglio tells how they attempt to make employees aware of quality; even though they have no programs specifically addressed at that subject. They use Phillip Crosby Associates, etc.

1524 Marguglio hopes that the attitude of zero defects will "filter down". Marguglio response to a Board question concerning trend analysis; very gentle statement. It's not required by Appendix B. "We think we have a very advanced program."

1526 Decker refers the witness to exhibit 2 (which may be exhibit 2 to his testimony). Decker asks how the integrated group is working.

1527 Marguglio's answer is in terms of mechanics - that they are mixed together except in one area dealing with specialized response to ASME Board on Pressure Vessel Codes and all other areas the organizations below the managerial level are staffed by a combination of CPC direct employees.

1527 Marguglio's ask how many people are directly connected with soils and remedial soils activities?

1528 In the Q/A engineering section the number is 3 or 4. In inspection examination in test verification the witness did not know how many people he had (in the soils area).

1528 Marguglio is asked about attachment 2 to Keppler's testimony and the statement therein that the civil Q/A group is not adequately staffed. With sufficient experience capability and number for the planned complex remedial soils and foundation corrected actions. Marguglio says he didn't know when it was catagorized as a problem.

1529 Continuing the above, especially in light of the fact that Keppler is referring to future work; Marguglio agrees that the number of personnel in the civil Q/A section might not have been adequate to handle the planned future work and says we were aware of that and have made arrangements to increase the quantity of persons to meet the needs [I think Gene Gallagher says Bird was not aware of it.]. Marguglio then says he disagrees with the conclusion because he thinks that each of the persons within that section is suitably experienced and capable for his work assignment.

1529 Decker says I get the impression that the future is here, that you are ready to start on certain remedial measures. Marguglio says "And we have staffed to the appropriate level, I think we have increased our staff", and Decker says "Even though you don't know what the number is?" Now Marguglio thinks the number in the Q/A engineering section is 4. Decker again says "and you can't tell me though how many quality controlled people would be available and trained in the area of soils" and Marguglio says "No".

1530 Marguglio is asked how he determines how many people are needed.

1531 Decker ask him about the \$27 million cost of remedial actions and has he ever put a cost benefit on that [how much it would have cost to have done it right in the first place]. Marguglio says he has not done such a cost benefit analysis, but he's never had any trouble getting the people he thinks he needs.

1532 Marguglio is asked Decker's tennis question about I get better and better but I'm still not good enough. How do you determine when Q/A is good enough? Answer-We employ MAC (Management Analysis Company) who said everything is okay except for five specific findings that they had all of which in my judgment were of moderate to low consequence [I just talked to John Gilray and asked him to read the MAC Report and see if he agreed that they were of low consequence].

1533 Marguglio says every independent consultant we've had since 1976 tells us we are doing okay on Q/A. Decker asks about scheduling - how do the Q/A people know what the construction schedule is.

1534 Marguglio says the best way to find out is to attend the weekly scheduling meetings.

1534 Marguglio explains about hold points.

1535 The Board repeats its question "Have you got enough trained people from the company cost-effectiveness point of view to get there on time while hold point is initiated and get the proper inspection over with without delaying construction unnecessarily". Marguglio says "Yes we do". The Board then points out that in January, 1990, there were 22 thousand QCIR's (QCIR's describe the construction inspections to be made and provide a record of the status of those inspections.

1536 In May, 1981, there were still 8,300 of them. Marguglio denies that 1536 that these represent inspections that are lagging and he starts to explain. The Board (indicating some problem with creditability) says "There are some fine words in this testimony about front end loading, etc., but he has no way of knowing whether, in fact, inspections are lagging and deficiencies are found out after it is too late. At the bottom of 1536 and 37 Marguglio makes a generalized statement that concludes that he does not know "characteristics"? are awaiting inspections. It is certainly not close to 8,300. The Board suggests that as a top level quality manager, he should give some thought to cost-effectiveness from that point of view. Marguglio then talks about orchestrated agony.

1537 Decker pursues it asking what the mechanism is available for formal request to the quality department to get down with the job.

1538 Decker refers the witness to page 16 of his testimony. He talks about a truncated prioritized list of actions which warrants special management involvement.

- 1538 With respect to a truncated prioritized list of actions which warrant special management involvement, who decides what is priority.
- 1539 The items are weighed first on the basis of the technical importance, then on the basis of their schedule impact and third on the basis of the amount of time that they have had in an open state and last on the basis of complexity.
- 1540 The people from MPQAD make these judgments.
- 1540 Explanation of the word manager on page 26 of Marguglio's testimony.
- 1541 Referring to hold points. When MPQAD reviews supplier inspection plans and when they decide that source inspection by either Bechtel or MPQAD is appropriate, they may incorporate hold points into the suppliers manufacturing process or inspection process. These hold points are contractually imposed. That system is about a year old. We have 275 Bechtel supplier quality representatives who are available to do this kind of work. The Chairman asked does MPQAD have authority to order Bechtel inspectors to do this. Answer - Yes, because MPQAD serves as a quality assurance department for the project as a whole. It serves Mr. Rutgers as project manager for Bechtel and Mr. Cook as vice president of the Midland project for CPC.
- 1542 The Bechtel people are state-wide. They are certified in accordance with NC standard 45.2.6. Judge Decker refers to attachment 2 to Keppler's testimony, page 4 paragraph 2A.

Seven of the ten components selected for review were not constructed in accordance with the Zion requirements. A finding by E. Yen.

- 1543 Marguglio's response in 2 of the 7 cases, the inspections had not yet occurred. In one case there appeared to be obvious damage after inspection had occurred. In two other cases, we remeasured the characteristics and found them to be within tolerance. "So I don't think this is independently accurate statement."
- 1544 I tell Judge Decker that the report will be here Monday. MPQAD came into existence in March of 1980.
- 1545 It became integrated in October of 1980. Judge Bechoeffer volunteers that the testimony says August. Judge Decker asks for the response to page 5 of the discrepancies noted with respect to small bore piping. Responses of the procedures for documenting the calculations were not being followed and immediate steps were taken to cause the procedures to start to be followed. Once it was pointed out to us, we also stopped the release of design packages until we were sure that the procedure would be followed, and we have retroactively gone back to look at the packages. In no case has an individual hardware problem been indicated.
- 1546 The NRC inspector thought that the CPC audit process should have uncovered this problem. Judge Decker asked is it QA function to assure that stress analysis had been performed or is it your function to attempt to determine whether or not

those stress analysis are adequate. Answer - To assure that they have been performed and that they have been performed in accordance with the administrative procedures - "It is not our function to determine whether the calculations are accurate.

1547 The particular small bore piping problem had nothing to do with the adequacy of the calculations, it had to do with the documentation of the calculations.

1548 Marguglio disagrees with the Staff's conclusion that primary QC inspectors lack necessary training or experience. Part of the corrective actions Consumers agreed to take does not involve QA inspectors lacking adequate training or experience because "we believe they are trained.

*top p 6
attachment 2
to Keppeler*

1549 And experienced sufficiently and certified. Marguglio "very definitely agrees with the Staff's conclusion". Reference to page 7, paragraph 2(a) allegation concerning trend analysis. "We are not in the practice of trending the activities at a supplier's facility". The trending activity simply does not apply.

1550 The claim is that the large number of NRC's against the reactor coolant pump during the last 2 years indicates a trend that has not been addressed and they asked Marguglio's response. Marguglio says all these NCR's were written very close together in time so that's a problem with establishing a trend and they also do not incorporate into the trending program the inspection results of supplier components and they do not demand that their suppliers establish trending programs.

- 1551 Some more about the general responsibility of quality assurance to assure that persons who had the responsibility and authority to make the judgments, that the judgments were made in a disciplined fashion and that they are documented. It is not our responsibility to perform the design function.
- 1552 The reference to page 10, paragraph 2(c) Marguglio says we looked at the apparent 18 cases in which the inspection hold points were passed or were not honored and we found that the requirement for these hold points in 5 cases coincided approximately with the work activity. He starts again - the time that the requirement was established and the time that the work activity was ready for this inspection was just about the same time in 5 cases and in 13 cases the work activity had already gone beyond the point of inspection so what happened is you had a hold point requirement "upstream" which the inspector could not honor because the work had already gone by. In the interest of conservatism, he wrote non-conformance report.
- 1553 The hold point in 13 cases did not exist. Marguglio does not understand why they were cited.
- 1554 The stop work order was lifted after Marguglio looked into. Attachment 2, page 11, paragraph 2(a) "Quality Control Inspection of May 12, 1981 failed to identify minimum bend violations for Class 1E cable". How did it happen that your inspectors did not find this. Marguglio says that the fact of not finding this is not indicative of a lack of training or

qualification. It is individual case of a non-conformance being unobserved.

1555 And there is a possibility that MPQAD over inspection might have observed this. And it might have been observed during the check-out process (I don't think he answered the question). Do you agree with NRC view that identification of root causes for repeated non-conforming conditions has not been accomplished.

Answer - I don't agree with it. There is always a continuing need to improve. Isn't it true that identification of root causes and appropriate corrective action is the one of the bones that NRC has been picking with you over the years. Marguglio in a lot of words says yes. But you don't agree with that.

1556 No, I didn't say that. I agree that it needs improvements but I disagree with the statement as worded in paragraph 3.

Questions by Judge Bechoeffer. Is this something that should be factored into the trend analysis program. Marguglio indicates no this is something that should be incorporated into corrective action procedures as contrasted technically to trend analysis procedures. But they go hand in glove.

1558 Jeff Kimball direct.

Kimbell

15587-1616

response to questions 1, 2, 3, 4 and 6 are admitted into

any of Darl Hood, Jeffrey Kimbell and Eugene Gallagher on
intention 1 is bound into the record.

that the report entitled, "Salzburg Hazardous Waste Disposal
doesn't address the Midland Nuclear Plant Site. This waste proposal
submitted by Dow Chemical is somewhere between 1 and 2 miles east
of Midland Chemical Plant. The waste disposal site report deals
with mining of salt, ground subsidence and cavities, and

of solution mining and ground subsidence were first identified
in the PSAR. The staff has posed questions on subsidence
risks and Consumers has committed to subsidence monitoring over
the life of the plant. This monitoring information is being updated
and the staff is continuing to consider this data in
connection with its operating license review.

describes the two types of mining that Dow Chemical is engaged
in at the nuclear plant namely reduction and reinjection mining and
solution mining.

- P. 1563 & 1564 The staff has been in possession of the data generated by Geospectral Corporation on anomalous dips and faults in the area of the proposed land fill for approximately 3 months. As a result of this new information, Consumers has hired a consultant to gather more detailed information on the geological foundations in the area. Jeff believes that this information will then be incorporated in the FSAR. At that point the staff will look into the data to see if in fact there are anomalous dips and faults in the area.
- P. 1565 The staff is not aware of any faults that parallel the Tiabawaski River. The staff is aware of no specific faults in the region, however, the applicant is gathering more detailed information and it is possible that this information may show some types of minor structures in the area including folds or faults.
- P. 1566 To the staff's knowledge, Dow Chemical is not pumping at 10,000 pounds per square inch. That is the pressure that is most commonly achieved only in the laboratory. The staff asked Consumers to determine what pressures Dow was pumping at. Consumers responded by saying that Dow was not pumping at 10,000 pounds per square inch. However, they could not give the staff another pressure.
- P. 1567 Jeff refers to page 154 of a book called the Dow Story wherein there is a reference to pumping at 10,000 pounds per square inch at a depth of about 4,000 feet would produce hydrofracturing of the rock. Ten thousand pounds per square foot as opposed to per square inch would be a much lower pressure to be pumping at.

- P. 1568 Jeff states that there has been no recorded earthquakes since the
& 1569 University of Michigan began running its seismic station in the early
1960's. Jeff states that it is unlikely that any earthquakes are
occurring in this region.
- P. 1570 The issue of ground collapse was addressed in PSAR. Further the staff
has required Consumers to setup a subsequent monitoring program. Consumers
in its FSAR has estimated the size of the cavern that might exist
within one-half mile of the site.
- P. 1571 The size of the cavity which is located within one-half mile of the
site was estimated based on the volume of 1.1 million cubic yards of salt
that had been removed from the cavity. The approximate size of the cavity
is 700 feet in diameter and a height of approximately 25 feet. Consumers
has hired 2 consultants to estimate the impact of these galleries, that is,
to determine if the ramification on the overlying soils, if a collapse
occurred. The consultants estimate was that the cavity would extend upward
approximately 500 feet.
- P. 1573 Jeff discusses the effect of high-pressure injection into an earth fault.
He notes that if high pressure injection is put into an earth fault which
is under stress it would be of concern to the staff. However, the staff
has no knowledge that this is what is occurring near the Midland site.
- P. 1576 Mr. Vincent Castellanos is introduced to the Board, and takes over the
cross-examination of Jeff for Mrs. Stamiris.

- P. 1578 Jeff admits that the staff doesn't know the exact pressures Dow is pumping out. For the injection mining to be of concern the following 3 things need to occur.
- (1) you must have a region that has a high degree of tectonic stress;
 - (2) you must have faults in the region; and
 - (3) you must be pumping to pressures high enough that they will overcome the stress of the fault.
- P. 1579 Jeff reiterates that the staff is not aware of any faults in the Midland area. In his judgement it is not a region of tectonic stress. These two factors lead him to conclude that he did not think the injection mining would present a problem.
- P. 1579 Consumers consultant, Western Geophysical, is gathering well-logged information on this matter and will be providing this to the staff on a later date.
- P. 1580 Jeff states that the Michigan basin region doesn't have many structures in it. That is, it doesn't have many folds or faults, the rocks themselves are fairly underformed.
- P. 1582
& 1583 Jeff reads from page 154 of the book called the Dow Story. Jeff states that he cannot agree or disagree with the event described on page 154 of the book. However, he points out that pumping done in that story was at a depth of 900 feet whereas the pumping now going on is at depth of 41,000 to 43,000 feet.

- P. 1584 Part 252 of the FSAR contains maps that show the location of the salt solution mining and reduction and reinjection wells within one-half mile of the site.
- P. 1585 Jeff doesn't know why the maps only cover wells within one-half mile of the site.
- P. 1588 Jeff states yes it is possible that there is a gallery within one-half mile of the site.
- P. 1590 Jeff states that no capable faults has been identified east of the Rocky Mountains. The one possible exception of the new Madrid Region. The discussion of capable faults will be factored into the staffs operating license review.
- P. 1591 The staff informs the chairmember that it will take into consideration these wells, to the extent that they feel is necessary or to the extent that it relates to the generation of site-specific response spectra.
- P. 1593 A gallery is a void that exists in the subsurface. Jeff cannot give the specific location of the gallery.
- P. 1596 Jeff discusses the consultants report concerning possible cave-in of the gallery. Using a bulking factor, the consultants estimated that should the cavern collapse it would extend up 500 more feet.
- P. 1598 Jeff states that the calculated dimensions of the gallery are based an assumption that it is circular.

- P. 1599 Jeff states that he has no expertise with respect to the cone of influence of an injection well. He states that those questions have to be answered by a geo-technical engineer.
- P. 1600 Jeff states that the stability of the soils surrounding the nuclear facility could be affected by solution mining and injection mining. He adds that that is percisely why the subsidence monitoring is being required.
- P. 1605 Cross-examination by Miller. None of the seven publications which Jeff co-authored dealt with the classification of tectonic provinces. The NRC accepted subdivision of the central stable regions, specifically, they accepted the Michigan Basin for the Greenwood Power Plant. That plant was to be located north of Detroit. That plant has not been completed.
- P. 1606 Jeff has worked on the seismic analysis of the Enrico Fermi plant which is also in Michigan. The seismic design input for the Fermi plant is consistent with the central stable region tectonic province.
- P. 1607 Jeff gives his speech on Definition of Ground Motion with Respect to Indensity and Magnitude. He explains that when you use the sites-specific spectra approach there is no specific peak acceleration yielded.
- P. 1610 Jeff gives his opinion that subsidence is not now occurring.
& 1611

1611

Jeff states that he believes the subsidence monitoring itself would give some sort of a warning if subsidence indeed was occurring in the region. In other words, the subsidence would not simply happen overnight.

P. 1614

Jeff states that an area of 200 miles around the site would go slightly outside some parts of the Michigan Basin and would be slightly inside other parts of it.

P. 1614

Jeff states that the probability study probably satisfies no. 361.7, which was posed by the staff.

P. 1616

Marks the end of the examination of Jeff Kimbell.

~~1617-1689~~
~~Margaglio~~
~~Assessing~~
~~not~~
~~summarized~~

- 1617 The Chairman asks Marguglio (Marg) about over-inspection. He said the practice started at Consumers in 1976 as a corrective action to the rebar situation. CPC started a practice of reinspecting 100% of the rebar replacements. The term over-inspection is synonymous with reinspection.
- 1618 The purpose is two-fold. (1) To assure that the project is in accord with its assigned design requirements and (2) to assess Bechtel's effectiveness. The Chairman asks is there any difference between the old system whereby Consumers overviewed Bechtel and what is now an inspection by MPQAD with an over-inspection by Consumers. Answer: Prior to 76 the CPC quality assurance overview did not include over-inspection. Subsequent to 76 (1619) the overview also included over-inspection.
- 1619 MPQAD did not result in one less layer of inspection because MPQAD continues to perform an over-inspection of the Bechtel quality control inspection. The Chairman then asks what about insofar as other QC activities are concerned. Is there now one less layer of review? Answer: There is a single review or single performance of the quality assurance activity and the performance of that activity is by a combination of Bechtel and QA personnel. The advantage cited in my testimony are the Consumers' personnel are getting to perform this activity up front--on a more timely basis.

Marg

1620 So in the above sense you can consider it to be a single review. We (CPC) continue to have an overview of a different kind. We continue to have independent quality assurance audits made by Bechtel Corporate Quality Assurance Organization, made by Consumers Corporate Quality Assurance Organization and by external consulting organizations. The Chairman then asks about trending analysis. How do you determine when something becomes a trend?

1621 Marg's answer.

1622 Determining when you have a trend is based on Consumers own experience. They don't go outside their own company.

1624 The Chairman asks Marg about Exhibit 1 to Cook's testimony which is an organization chart. The Chairman asks Marg, do you report to him as VP of engineering and construction or do you report to him as head of the Midland project office.
Answer: In his capacity as VP of projects, engineering and construction. Discussion of Cook's dual capacity follows.

1625 Bird reports to Marg for programmatic direction. In his day-to-day managing activities he reports to Cook as a member of the project office.

Marg

1626 If Bird wanted to discuss a QA procedural matter he would discuss it with Marg before Cook, but if he were closing out a non-conformance report he would probably go to Cook if it was a non-conformance identified by the NRC.

1627 There are no problems with Bird reporting to Marg for some purposes and Cook for others (according to Marg).

org.

1629 The Chairman asks Marg a question about June of 1980 when the percentage of QA and QC people was highest as compared to manual personnel (this concerns Consumers Exhibit 1-Statistics on QA personnel).

1631 The Board asks the witness about changes in Reg Guides since 1976. Marg relates changes in one guide.

1633 In response to a Board question Marg references pp. 29-30 of his direct testimony (following Tr. 1424). Beginning of 1979 selected major procurements were processed through CP quality assurance program rather than through Bechtel quality assurance program in order to provide CPC with direct control of the new work represented by these procurements. At Tr. 1633 and 34 Marg describes why CPC decided it was more effective for them to handle this QA than Bechtel.

- 1635 The Board Chairman is still inquiring with respect to inspection requirements mentioned on p. 31 of Marg's direct no one was "grandfathered" in.
- 1636 MAC Management Analysis Corporation discussed at p. 36 of Marg's testimony--the Board asks whether they made recommendations for further improvements (that was at 1635).
- 1636 CPC is in the process of responding to the five recommendations made by MAC--correction, some have been closed out, some are in the process of being closed out. CPC requests MAC to assist them in locating a particular QA personnel from time to time but Marg is leary of companies that are in the consulting business and in the business of supplying bodies.
- 1638 MPQAD is staffed with mostly degreed engineers, many at the masters level and some professionally registered engineers.
- 1638 The Chairman inquires whether after a QC inspector initates a non-conformance report he is told what the ultimate determination is.
- 1639 There is no formal procedure on it but he is told.

1640 If the QC inspector doesn't agree with the disposition, there are a number of appeal panels.

1640 Marg is asked why he thinks CPC's QA program was equal to or better than comparable programs.

1641 The first answer is the MAC assessment. The second basis is informal communications with other people in the industry. The third element is Marg's list of items of non-compliance which is technical term relating to non-conformances found by the NRC. He counts the number of non-compliances in relationship to the number of NRC inspections. He categorizes the number of non-compliances into (1) deviations, (2) infractions and (3) violations and assigns a point value to each. This type of information is exchanged with other utilities and he says based on this comparison, CPC is doing okay (that part is on 1642).

Miller

1643 Redirect examination of Marg by Miller. No one ever suggested that CPC did not report Zac in a timely fashion.

1644 Miller marks CPC Exhibits 2 and 3. Zac was being investigated prior to the NRC being involved. CPC was concerned that non-conformances were not being resolved as quickly as they should have been.

- 1646 Marg indicates it was customary for non-conformance reports to go to the NRC and there were non-conformance reports with respect to Zac. He doesn't know whether the management corrective action request was transmitted to the NRC he doesn't know whether Ron Cook knew about the Zac situation prior to March 6, 1980.
- 1647 CPC Exhibits 2 and 3 are received. Miller then asks him about Stamiris Exhibit 2 audit finding report.
- 1648-49 Marg describes written procedures which set forth guidelines for determining whether or not an item is reportable under 5055(e) set out in full on 1649.
- 1650 Miller indicates that on CPC Exhibit 1 it shows 96 quality assurance personnel as of July 1981 and that included 25 for Zac and he asks Marg why 25. Answer: Because on July 1, 1981 MPOAD assumed the primary quality control as well as QA role with regard to HBAC. ⁸¹
- 1651 Prior to July 1, 1981, Zac had the primary role. Miller asks Marg about "craft orientation for quality." Marg explains that crafts persons are given an orientation a large part of which has to do with responsibility of the individual toward quality objectives.

- 1651 Miller asks Marg about attachment 2 to Keppler's testimony which is the summary of the May inspection. Referring him to page 7 discussing the large number of NCR's written against reactor coolant pumps.
- 1652 Marg explains why trend analysis is not applicable to the reactor coolant pumps because it is not intended to cover work performed by suppliers offsite.
- 1653 Marg says there are a number of other techniques that are used by which corrective action is implemented with respect to quality assurance matters. [Coordinate this with Gilray's statement that too much emphasis has been placed in the hearing on trend analysis.] *other than trending*
- 1653 He asks Marg if there are any remedial actions for soils foundations presently under way at the site.
- 1654 None. The first remedial is planned for mid-fall 1981 or next spring. And MPQAD is cognizant of the schedule.
- 1654 MPQAD's plans definitely include the hiring of necessary qualified individuals to perform a quality control/quality assurance function for the remedial work. Miller then refers Marg to the p. 12 of attachment 2 to Keppler's testimony *cur*

"identification of root causes for repeated nonconforming conditions has not been performed."

1655 Nonconformance reports contain a section that deal with root causes. The fourth category of the report is a determination of the cause of nonconformance--preferably the root cause.

1657 Barbara asks Marg about the trend program (bottom line).

1658 More discovery questions about the trend program.

1659 Barbara asks him the five deficiencies pointed out by MAC.

1659-60 He remembers three of the five.

1661 The MAC report has been submitted to NRC Region III.

1662 He discusses the purpose of the MAC evaluation.

1663 Barbara asks him about the NRC inspection of May 1981. The CPC knew about it a couple of days ahead of time.

1664 Jim Cook of CPC invited Keppler to come and familiarize himself with the quality assurance program. That is quite different than coming for an NRC inspection which was Mr. Keppler's idea. ✓

- 1665 Marg is not aware of the difference of opinion with respect to small bore piping. A stop work was put into effect with respect to the small bore pipe work that had not yet been done. Marg says there was a decision made not to release additional design packages until we were assured that these packages included the appropriate calculational documentation.
- 1666 Marg explains his statement about a possible conflict of interest that MAC appraising and supplying the bodies at the same time.
- 1667 Barbara tries to equate this to to Bechtel doing an audit on Bechtel work. Marg says it is the custom of the industry.
- 1668 Marg says the quality assurance department at the time of the identification of the diesel generator building problem I believe that the two main causes for the settlement where the failure to compact the soil to the required density compounded by the failure of the testing process to detect the poor compaction.
- 1669 Barbara makes a plea about being the only person who wants to explore the facts prior to December 6, 1979 and says she has been told she will be allowed to do it.

NOTE:

The contents of this package
are maintained in a three-ring
notebook by William Paton
Titled: TR. SUM: August

- 1671 Barbara is still trying to ask him about the cause of the diesel generator building settlement problem.
- 1671 Marg is not aware of any confidential records within CPC which blame Bechtel for the settlement problems.
- 1673 The last eight lines. Barbara complains again about her inability to ask questions about facts before December 6, 1979.
- 1679 Does the quality assurance department have a system for catching design errors--he is asked to explain the system. Answer: The designs are subject to design review and after they are transformed into hardware are evaluated as part of the qualification and acceptance tests of the hardware. Analytical activities are used as well in the design process. The Board Chairman then cuts her off in response to Miller's objection. Marshall cross-examination follows.
- 1683 Miller objects to my questions about Consumers Exhibit 1 saying I am trying to impeach Marg's good faith.
- 1684 I explain that they neither gave the information asked for by the Board nor explained why it wasn't available. (The thrust of my question in the middle of 1683 was that the information asked for Marg said was not even available in 1981.

- 1685 The Board Chairman directs Consumers to produce the information so I abandon that line of questioning.
- 1686-7 I developed that Bird, Manager of Quality Assurance, reports to Cook who has scheduling responsibility for the construction of Midland. Marg says that when Bird reports to Cook, Bird has sufficient authority and organizational freedom to perform his crucial functions effectively and without reservation. Marg says I make an unreasonable implication. (I didn't make any implication at all and Gilray later told me this organizational setup is fine with him.)
- 1688 Miller develops that the NRC was advised about the organizational setup that was just described.
- 1689 Miller cannot get Marg to say that the NRC approved that setup. I place on the record that I was not raising any implication and that I agreed that the NRC does approve of the organizational structure described.

MIDLAND PROCEEDING

July 10, 1981

- P. 1690 James Cook is called as a Witness.
- P. 1693 Cook's direct testimony is bound into the record as if read.
- P. 1695 Cross Examination by Stamiris:
The plant is now 70% percent complete of the 30% percent left to be done consist mostly of small pipe and hangers, cable spooling, terminations and completion of design changes that have resulted from Three Mile Island.
- P. 1700 Cook is not familiar with the response to the notice of the hearing.
- P. 1701 Cook explains that the decision to request a hearing was made prior to Cook joining the Midland project, therefore, he was not a party to that decision.
- P. 1704 Stamiris directs Cook's attention to the request for hearing and asks him if that document indicates that Consumers denies that there was a QA breakdown prior to December 6, 1979, Miller objects to this question.
- P. 1706 Stamiris asks some questions about whether Consumers has changed their position in this proceeding, Staff objects to the relevance of this.
- P. 1707 Stamiris states that if there was a breakdown in QA then there
-

P. 1707 con't

should not be a stipulation if there is also was a breakdown in QA it should have been admitted earlier on and not at such a later stage of the stipulation stage.

P. 1708

Cook states he doesn't really know what the term "breakdown" means but it is his job to try to get whatever problems there are at the plant fixed.

P. 1709

Cook states the Consumers is in this hearing because the company felt it would be beneficial in resolving the problem that they felt had not been getting fixed before. Cook qualifies that he is not speaking for those people who made the initial decision to request the hearing.

P. 1710

Stamiris asks for further examples of Cook's willingness to keep informed on construction and QA issues. This interest is set forth on page 4 of his prefile testimony. Cook responses by saying just look at his desk calendar which shows that his whole day is spent trying to found out what is going on in this project and trying to move it along.

P. 1710

Cook does not believe that his willingness to stay informed is a subjective statement, it can be supported by detailed events meetings, memoranda, etc.

P. 1711

Stamiris asks for more specific examples and Cook responses by discussing meetings with Midland site people, meetings with NRC people, meetings with home office and meetings with Bectel project team personnel.

P. 1711

Stamiris asks what the words "successful completion of the project" mean those words appear next to IV on page 4 of his prefiled

P. 1711 con't

testimony. Cook responses that successful completion means finishing the construction and receiving an OL from the NRC.

P. 1713

The most recent design concept for the service water structure was identified to the Staff in late February 1981. Cook states that there were some open issues with the former design proposal for that building. Stamiris asks when did Consumers first know that the NRC was not satisfied with the first remediation for the service water structure? Cook is not exactly sure but he thinks it became clearer during the depositions prior to the commencement of this hearing.

P. 1714

Cook believes that the initial remediation which involved piles and corbels was formulated sometime in 1979.

P. 1715

There has been a recent change in the fix for the auxiliary building. This new fix was adopted because it was recognized that the seismic requirements were going to be substantially in excess of what had been anticipated previously. As with the service water building there was an ongoing dialog on open questions with respect to the first design remediation for the auxiliary building.

P. 1716

Stamiris asks whether there are any actions besides the boring matter where Consumers has taken action to satisfy the NRC even though they didn't believe it was necessary. Cook responses by describing the give and take process which occurs between the applicant and the NRC Staff.

P. 1717

According to the contract between Dow and Consumers, Consumers

P. 1717 con't

should be providing Dow steam by December 31, 1984. Stamiris asks Cook about the first statement that's made on page 5 of his direct testimony. She wonders what caused Consumers to recognize in late 1979 that the plant could not be completed on the then existing schedule. Cook responds that he was not involved in the project at that time, but he believes the analysis of the company showed that post TMI developments and the progress of construction at the site were the cause for the schedule.

P. 1719

Cook recalls that the new completion dates offered by Bechtel in 1979, extended beyond the 1984 Dow steam contract date.

Cook states that there was a desire on the part of Consumers to improve on the Bechtel schedule, he adds that the main motivation behind wanting to improve on the schedule was not the fact of the Dow contract.

P. 1720

The new costs figures given by Bechtel were 3.1 billion.

P. 1720

Mr. Howell held a press conference in Midland in March 1980 soon after the company decided to go forward with the Midland plant.

P. 1721

Cook was not at this press conference.

P. 1722

Cook states again what he means by "successfully completing" the project, he means completing it on time, on budget and meeting all regulatory requirements.

P. 1724

Stamiris asks whether Cook agrees with Howell's position that if

P. 1724 con't

it hadn't been for the Intervenor's the Midland plant would have been built and operating for a couple of years now. Cook does not believe this he has not made any such analysis.

P. 1725

Stamiris asks whether Cook believes that intervention is frivolous, Cook responds that there are several kinds of interventions, some which are frivolous and some that aren't, he states that those intervenors who merely try to obstruct the process are frivolous, however he says it is the right of citizens to take advantage of the process and ask questions and he has no complaint with that approach, in fact sometimes it helps him do a better job.

P. 1730

Possible to go too fast

Cook explains how increased participation by Consumers will help getting the project done better. Stamiris asks if its possible to proceed to quickly on a project to the detriment of safety; Cook responses yes that can happen, but that's why there is a QC and QA program which defines the rules of how one can proceed as long as one is meeting all the QA requirements he doesn't believe one is going to fast.

P. 1731

Cook adds that problems can arise because of moving to slowly because you loose a sense of continuity. The position that Cook moved into in 1980 was a new position.

P. 1732

Cook believes that since he has taken over there has been an attempt to improve the schedule and to get the work done in a more efficient manner. As part of that Consumers actually held construction back for most of 1980 because it felt the design was not advanced enough to really go forward with construction.

P. 1732

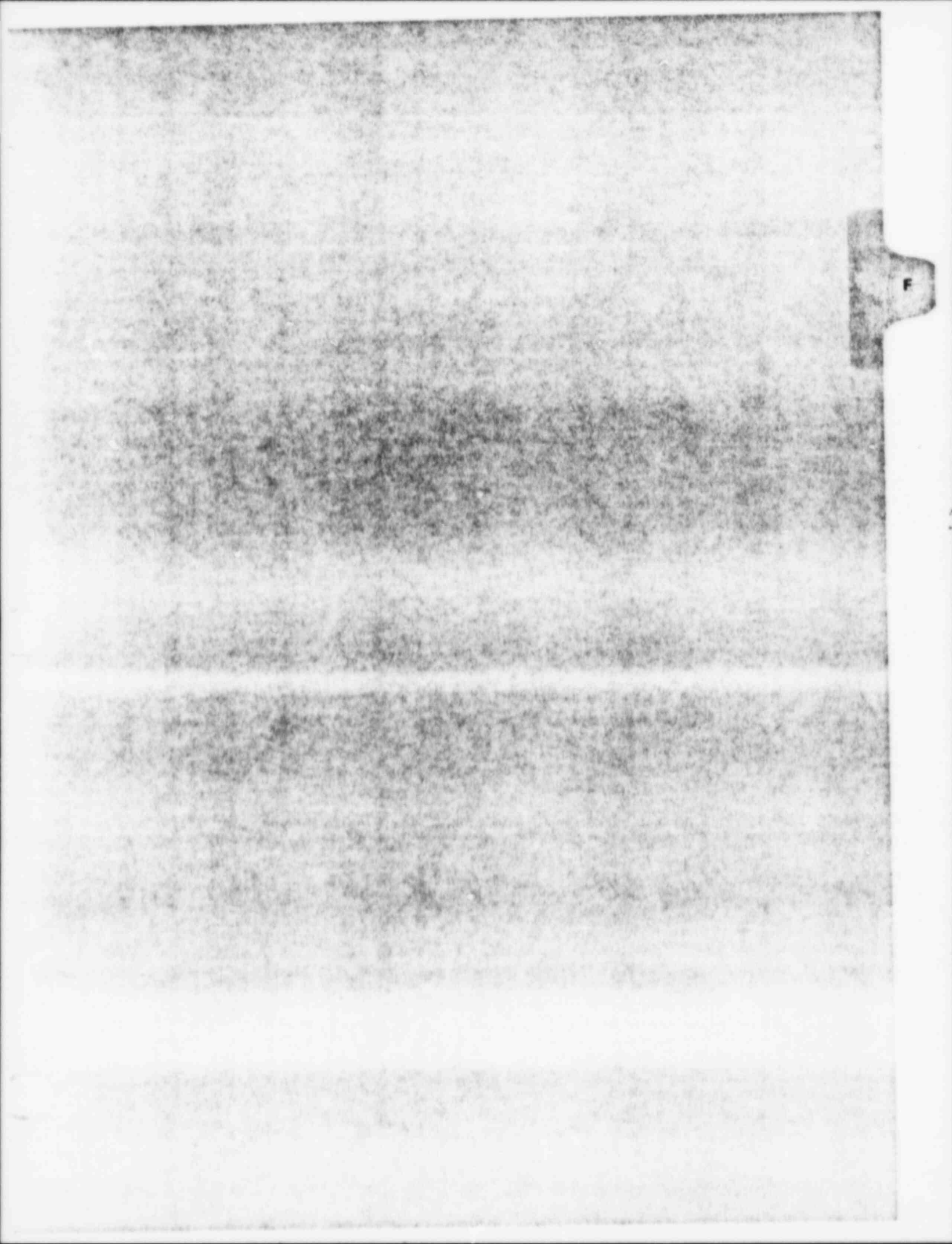
Cook states that his objective has been to work better and
work smarter.

P. 1733

Cook states that since he's taken over there has been more work being done over an certain period of time that is more people have been working simultaneouly on different jobs.

P. 1734

Cook clarifies that he does not believe that the unit rate per work per man has been going any faster since he took over.



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1736 → 1854

P. 1751 Stamiris Exhibit No. 1 was received in evidence. After a long debate over whether a document, entitled "Inconsistencies Discovered To Date" could also be admitted. No decision was made on the admissibility of that document.

P. 1752 Begins the direct examination of Eugene Gallagher with respect to Contention 3.

P. 1754 Gallagher's testimony is admitted into the record as if read.

DIRECT

DIRECT

re contention 3

P. 1755 Stamiris attempts to introduce the NRC staff testimony of Gallagher with respect to quality assurance program implementation prior to December 6, 1979.

P. 1756 Stamiris states that she wants Gallagher's testimony prior to December 6, 1979, in the record because she believes that period of QA implementation bears very heavily on the question as to whether reasonable assurance now exists that QA will be implemented properly in the future.

A

P. 1759 The chairman reiterates that the Board has ruled that various witnesses maybe cross-examined with respect to earlier events, namely earlier QA deficiencies.

P. 1762 The chairman clarifies that cross-examination will be allowed whether the current program takes into account the earlier QA events.

P. 1770 Gallanagher's testimony prior to December 6, 1979, is marked as Stamiris Exhibit No. 3.

only → not admitted here

P. 1776 Marshall calls Gallanagher an efficiency expert.

P. 1755 Protracted discussion on the admissibility of Gallanagher's testimony to 1784 prior to December 6, 1979.

P. 1785 Gallanagher states that the purpose of his testimony prior to December 6, 1979, was to support QA basis for the order.

P. 1786 Gallanagher states that his prior to December 6, 1979, testimony is relevant only to the extent that one must first identify what happened in the past in order to know what not to do in the future, and in order to know whether corrective actions has been taken to preclude a similar occurrence from happening again.

P. 1787 The NRC resident inspector was first on site in July of 1978.

P. 1788 As stated in Report 78-20, Consumers first notified the NRC resident inspector of the excessive settlement of the diesel generator building on August 22, 1978. Consumers subsequently filed a 50.55E report on the settlement.

- P. 1789 Consumers reported the settlement under 50.55E1111 which is basically a significant deficiency in construction and/or significant damage to a structure system or component.
- P. 1791 During the first inspection of October 24, 1978, Consumers only had preliminary proposals established for remedying the settlement problem at the diesel generator building.
- P. 1793 Reports 78-12 at page 3, states that the staff was informed of Consumers plan to preload the diesel generator building.
- P. 1800 Barbara states that each example she gave under Contention No. 1 alone does not constitute bad managerial attitude. However, when you take all of the examples together she believes a pattern emerges.
- P. 1806 Gallanger states that his work as a Region III inspector was not merely limited to QA issues. He also observed construction work, evaluated whether construction procedures were adequate, and reviewed the results and tests of those activities and documented them in the form of inspection reports.
- P. 1807 Gallanger states that the purpose of report 78-12 was merely to go out to the site in an attempt to follow up on the 50.55E report, to gather as many facts, figures and impressions as possible in order to brief Region III management on the matter. Item D, Nos. 1 thru 13 on page 4 of report 78-12 merely lists those preliminary items that Consumers reported to Gallanger as being an approach to the settlement problem.

During this inspection, the staff made no assessment of Consumers financial ability to remedy the diesel generator building settlement.

P. 1810 Bechhoefer asks whether the staff witnesses who will address the adequacy of the remedial action will also be able to discuss the alternatives which were considered with respect to remedial actions.

P. 1811 The staff informs the chairman that there are other NRC witnesses who will testify to the consideration of alternatives.

P. 1814 Paragraph 3a on page 6 of report 78-12 identifies the discrepancy between the FSAR and construction drawings with respect to the type of material supporting certain structures. Specifically, the FSAR identified material supporting safety related structures as being cohesive clay material while the drawings for construction stated that random fill would be used.

P. 1815 Gallagher states that what was used in the field is what was stated on the construction drawing which was what was at odds with what was stated in the FSAR. Random fill was actually used.

P. 1815 Paragraph 3b of report 78-12 states that the FSAR described the method by which the material would be compacted and there was no construction specification that contained this requirement.

P. 1817 Consumers moves to strike all of the cross-examination that has occurred this morning as being irrelevant.

July 11, 1981

P. 1820 The Board denies Consumers motion to strike.

P. 1822 Gallanger states that the discrepancies between the FSAR and the site specification procedures was a violation of criterion 3 of 10 CFR part 50, Appendix B, design control. Based on the staff's investigation, the cause of the inadequate translation of FSAR requirements into specifications was determined to be inadequate design control and verification of those parties who developed the FSAR, PSAR and those parties who developed the construction specifications. Gallanger adds that there was certainly a lack of design interface between different parties developing the specifications and the FSAR.

P. 1823 Gallanger states are based on his investigation. There was an apparent lack of design communication, design interface verification and checking between the Bechtel group that offered the FSAR and the Bechtel group that wrote the implementing specifications.

P. 1823 Consumers in its response to question 23 committed to an extensive review of the FSAR to identify whether any further discrepancies. The staff followed up on the review and documented that follow up in report 80-32.

P. 1824 In report 80-32, what the staff verified that Consumers had done an extremely large amount of work reviewing the FSAR for inconsistencies nonetheless, the staff identified an item of non-compliance. Gallanger states that Consumers has made systematic changes to prevent recurrence

FSAR

revised

Specifically, they have refined their procedures and methods for developing the FSAR and the associated construction specifications by using a system of verifications and checks. Further, there is now a requirement that anyone developing a specification must go to the parent document and all references made in the document.

1825 Gallagher indicates that the systematic changes were merely just a clarification of what they were supposed to do before. Gallagher states that he thinks that the former procedures were clear enough, however, people were simply not following them.

1826 Gallagher states in his opinion the new system is more likely to make people do what they are supposed to do. This is because it is now clear who is to be held accountable for what. That is there is now a principle reviewer for each document and that person is held accountable for the task.

1827 Gallagher believes that the revised procedures will be followed in the future because the people who have to execute the design controls are much more aware of their responsibilities now. They are also aware of the importance of this job vis a vis the successful execution of the project. In sum, Gallagher believes that the information and importance of design control has filtered down from management to the people who actually have to do the work.

1830 Gallagher states that obviously there is a tremendous motivation on the part of both Consumers and Bechtel to do the work properly - that is, to do it the way it was supposed to

have been done the first time so as to avoid any other similar problem.

1834 Report 81-01 found that the individual who had been designated as the full-time geotechnical engineer was not properly qualified. Consumers, in response to a 50.54(f) question had specifically committed to having one full-time and one part-time onsite geotechnical engineer.

1835 Gallagher states that Bechtel designed document C-501 has been in effect for the full length of the project and that that design document identified the existence of an onsite qualified geotechnical engineer.

1836 Gallagher recalls that in April of 1979 Consumers placed an onsite qualified geotechnical engineer. That geotechnical engineer remained onsite through December of 1980. It was only during the inspection of January, 1981 that the NRC discovered that the geotechnical engineer had been replaced and that the new geotechnical engineer did not have the requisite qualifications.

1837 Gallagher states that the NRC could not qualify the new individual as a geotechnical engineer in accordance with Consumers commitment in 50.54(f) responses.

1839 Gene describes how a 50.55(e) report is dealt with in Region III. Specifically, such report is assigned to the specialist in the respective field of the report.

1847 After considerable discussion about 50.55(e) reports, Gallagher states that the only 50.55(e) report that he had responsibility for was the one regarding the soils settlement issue.

1848 Gallagher describes how the adequacy of soil tests can be determined after the fact. This can be done by reviewing the QA record of the tests and determining whether the results are within the bounds of the theory for that test. One can also directly observe and witness the in-place tests or the laboratory tests, and can determine whether the people conducting the tests are doing it in the proper manner.

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MIDLAND TRANSCRIPT SUMMARY

- 1858 Judge Decker stated, the reasons he wanted the top Bechtel man in MPQAD is to find out how it will function for remedial soils work and the capabilities of MPQAD to fulfill these functions. Saying he got only a general answer from Margulio.
- 1859 He asked for an organization chart of MPQAD with emphasis on the number and capabilities of people needed for remedial work. And he suggested bringing in Byrd as well and present the two as a panel.
- 1861 JAMES GEORGE KEPPLER - DIRECT EXAMINATION
- 1865 The Chairman asks Mr. Keppler questions about his testimony before December 6, 1979 which at this point has not been introduced [attachments 2-5 to Keppler's testimony before December 6, 1979 were marked and admitted by the Board as Board Exhibits 1A, 1B, 1C and 1D - not at this point but somewhere in the next several pages of transcript].
- 1865 The Board references Keppler's answer to Question 2 in his testimony that since the start of construction, Midland has experienced some significant problems resulting in regulatory action and he asks the witness are those problems outlined in Attachments 2 and 3 to your earlier testimony.
- 1866 Answer is yes.
- 1867 The Chairman asks what was the NRC's response to the August, 1978 settlement of diesel generator building problem. And he responds that the response was meetings held with the Applicant

on February 23, 1979 and March 5, 1979 and that summaries of those meetings provided to CPC on March 15, 1979 which is Attachment 4 - he agrees.

1868 The Board marks Attachment 4 to Keppler's old testimony as Board Exhibit 1C. Another part of the Staff's response was to seek review of the situation by the Division of Nuclear Reactor Regulation. Yes, and that is documented in Attachment 5, the letter to Thornburg, dated March 12, 1979.

1869 That last letter is marked as Exhibit 1D. Reference to Keppler's suggestion that consideration be given to an NRC directive or show cause order. It was ultimately decided to issue a 50.54F letter.

1870 The chairman reads the statement that lead technical responsibility and program review was transferred to NRR from I&E on November 17, 1978. That's from page 8 of Attachment 3.

1871 Keppler says we did that because of the complexity of the technical issues involved.

1872 We were transferring the technical concerns, not the QA problem [meaning not the QA implementation problem]. A reference to financial risk on Exhibit 1D, page 2.

1873 Keppler describes the uncertainties in the technical area with respect to the remedial actions. Keppler says historically construction problems pose no immediate threat - and therefore, an immediate suspension is not viable.

1874 What we were trying to do with the memo of March 12th is to get some action on the problem. The Board offers in evidence Board Exhibit 1A, 1B, 1C and 1D.

1875 The exhibits are received in evidence. Dr. Cowan references 6 problems listed on pages 1 and 2 of his [I assume current] testimony.

1876 At pages 2 and 3 you discuss the two root problems which Dr. Cowan reads into the record - over-reliance on Bechtel and failure to appreciate the possible generic application of individual events. Keppler explains what he means by a breakdown in quality assurance.

1878 Each of the six items was not a broad breakdown. Keppler says the licensee identified all his problems. They were not identified by NRC coming in and picking up the problem.

1880 The exception to the above is that the Cadwell problem in 1973 was discovered by NRC. All the others were discovered by CPC. The two major breakdowns since December 6, 1979 are again not broad breakdowns.

1881 Cowan asks will the new MPQAD do better. Keppler asks to digress and he does. He got together with a lot of other members of the Staff to determine if he was too close to the forest.

When

1882 That meeting concluded that Keppler was right [the next was very effective testimony] He says he brought in inspectors from other regions for a fresh perspective. They also said that the QA here was as effective as in their regions.

1883 He gets back to Cowan's question. Conceptually the new (MPQAD) organization sounded very good to us. With the inspection we found "that the program was working quite well."

1884 In response to a Board question, Keppler says he sent nine of his top inspectors to the site to look in depth into the implementation of QA program.

1885 So he is not surprised at the number of discrepancies found. He was surprised they didn't find more than they did. The inspection told him that the licensee is more in control of the project than they were in the past.

1890 After a lot of discussion about Staff Exhibit 1, Bechhoefer withholds formal ruling on its admission until it is dated.

1891 The document is dated July 10th and is admitted into evidence. Staff Exhibit 1.

1893 Marshall asks Keppler if it isn't true that a chain is no better than its weakest link. Jim had to think about that a long time and then gave his lengthy answer on 93-94.

1895 Barbara asks Jim about the Davis-Besse factor.

1897 Does current NRC practice allow you to proceed at your own risk. Answer - Yes. Unless you have a potential to cover up work. We concluded with respect to the diesel generator building and the soil settlement problems that continued work would not preclude corrective action later. Could corrective action include tearing down the diesel generator building and starting over.

- 1898 It could. Jim then gives an example of Zimmer without naming it saying that although its 95% complete, we will have a strong verification program as to quality.
- 1899 The 50.54F letter was not as successful as Jim hoped it would be.
- 1902 The Moffit Committee report expressed concern with NRC's failure to deal effectively with licensee performance.
- 1903 That report was one of the key factors in the implementation of SALP.
- 1904 Unless the Palisades performance improves, we could not recommend an operating license for the Midland plant.
- 1905 She asks him his data base for reasonable assurance into the future.
- 1906 Does management attitude have some relevance to quality assurance. Answer - Absolutely.
- 1907 He tells what the Palisades management did in response to recent problems.
- 1908 For the last six months, the progress has been in the right direction at Palisades.
- 1909 Didn't you also see a recent positive change in attitude in 1974. Answer- Yes. Barbara reads from page 608 of LBP-74-71 which is 8 AEC 584.
- 1910-11 After reading the old licensing board decision, she asks him whether reasonable assurance there was not based on promises for the future. Answer - Yes. And they kept those commitments. QA with respect to soils was totally ineffective.

- 1912 She reads the title of his testimony. He tells the purpose of the inspection.
- 1913 His finding of reasonable assurance is based on "the whole history of the thing". The only thing the inspection could have done was reversed Keppler's decision that QA was okay.
- 1914-15 Barbara is pressing hard to the effect that there is information about QA in '80 and '81 that we didn't put into the record. I think she is connecting this with her 50.55e request.
- 1918 Keppler says we had almost the same questions before us in 1974 as we have now.
- 1919 After reviewing some history at Midland, and at Palisades, Jim concludes that Midland complied with its commitments better than Palisades did.
- 1920 Keppler volunteers to provide all his inspection reports and all his 50.55e reports.
- 1921 I interrupt to tell the Board Chairman that I think we can work it out on the lunch hour - make an arrangement to provide for the 50.55e's that he is so earnestly seeking.
- 1926 The Zack problem was mishandled.
- 1927 Keppler's concern with Zack was that the problem was allowed to continue even after they were aware of the problem.
- 1931 Some discussion of the meeting in Washington on February 6 and the summary report of the 15th which was prepared in advance of the meeting (I think we're into exhibits 1A-1D). Not much substance here.

50.55e

55(e)

- 1935 They discussed the two or three basis which formulated Keppler's position at the conclusion of page 13 for the February 1979 meeting.
- 1936 Brief discussion of Zack seems repetitive. Consumers Exhibit 2 is the report on Zack.
- 1938 Keppler says he cannot give you the specifics of the anchor bolt problem.
- 1939 He doesn't know how many anchor bolts there were or what function they serve [I can't believe he didn't know that]. Barbara indicates she'll go into that with someone else [That's presently a problem].
- 1939 I think we're still talking about the 2 (or 3) criteria or basis which formulated his position at the conclusion of page 13 of his February 1979 meeting. At 1939, Barbara reads that reasonable assurance the work could continue was based on (1) resident site coverage, (2) the licensee overview program and (3) the continuing inspection program by regional inspectors.
- 1940 She asks, can you tell me when and why the overview program was first initiated. Answer - 1975 with problems with the installation of reinforcement steel and other imbedments. CPC provided an independent 100% check of Bechtel's QC. The overview program is not presently in effect independently, its part of the new integrated organization.
- 1942 With respect to the small bore pipes, wasn't that problem caught late in the program as opposed to early. A basic disagreement with small bore pipes was that CPC did not intend

to complete verification of stress calculations until a final walk down and NRC disagreed with that.

- 1943 Then he expresses ignorance with respect to the pipe whip restraint problem and the 50.55e reports on the auxiliary building in 1981. With respect to 50.55e reports, Jim said that there may be a different man assigned to each one. Barbara acknowledges that there is a different name on the 50.55e schedule that Gallagher gave her. Jim says the resident inspector is probably the best coordinator of all of them.
- 1944 The NRC is able to inspect 1-5% of construction work. Does that give you reasonable assurances to the other 95%?
- 1945 The sampling inspection we do is reasonably good. But we have problems, such as at Zimmer.
- 1946 These are very complex facilities, mistakes are going to be made. Jim then gives a litany of all the checks we make before it operates 100%.
- 1947 Is a plant that is moderately safe, safe enough.
- 1949 Jim says I don't know how to answer your question, all I can tell you is I waive these decisions very carefully. On balance, the plant is safe. Judge Decker asks him are you happy with the state of the art of quality within the industry.
- 1950 Yes, but it can be improved. Judge Decker says no doubt need it be improved. Keppler interprets that as saying that if he said it needed to be improved you'd have to shut the plants down, but he feels its safe. Keppler says he thinks we're improving.

- 1951 Judge Decker says is par for the course good enough. Jim says yes. A lot of plants that are operating today had weaker QA than we are requiring today for construction.
- 1952 In response to Judge Bechhoefer, Jim says he does not condone meeting the regulations [Clearly the Appeal Board does]. Since Three Mile Island, we have been pushing the industry towards excellence.
- 1954 After an exchange between lawyers, Jim rephrases the question, Line 10: Do I feel a pressure on Midland to back down on anything, the answer is no [Barbara was talking about the Reagan Administration effort to move licensing]. Can speeding up licensing indirectly effect enforcement of safety. She withdraws the question on the next page.
- 1957 Jim says he is not aware of problems going undetected by the QA system. He places a great deal of importance on the fact that he is sending inspectors to Midland and he is not finding significant quality problems that were not recognized by the company or its contractors.
- 1958 Barbara states her intent to withdraw both her appeals. Ellen volunteers to tell the Appeal Board about it. Barbara reads the title of the first of her two papers.
- 1959 Ellen reads the title of the other paper. Barbara refers Jim to page three of his testimony after December 6, 1979 and the reference to the fact that he would have stopped soils work if he had known about it. Asks Jim are you trying to do Consumers job for them.

2 appeals withdrawn

BA

- 1961 Answer - no. Is it the NRC function to pick up problems early.
Answer - hopefully, but it doesn't always work that way.
- 1962 We did not put a lot of manpower in the foundations inspection area.
- 1964 Barbara asks Jim about his basis for deciding that there was not a broad breakdown in QA and she says it now appears that the basis is that the licensee has been effective in ultimate identification and subsequent correction of deficiencies. Jim agrees that is the basis, plus the fact that problems were not extending over multiple facets of the job. She references the anchor bolt problem discussion on page 4.
- 1965 Jim says he doesn't know how they could have found it sooner.
- 1966 Barbara references "one-liners" - misgivings expressed by inspectors at the SALP meeting concerning the new integrated department.
- 1968 Jim remembers that some of his inspectors were skeptical that the integrated organization could work. They felt it would be too heavily dominated by Bechtel.
- 1969 There were two meetings after the SALP meeting. Jim Cook, VP and others met at Region III (without Jim Keppler).
- 1970 Jim Cook asks for a follow-up meeting because he thought there was some lack of communication. The second meeting took place in March or April. They wanted to go into much greater detail to explain the integrated organization. The explanation was good but "my inspectors were still very skeptical". And Jim I

decided to go to the site and implied at that meeting he would spend a week.

1971 He later decided to have a comprehensive inspection done by some of my better Staff members. Jim acknowledges that Consumers probably really got ready for this May inspection.

1972 But you can't mask what you're doing, even with six months notice. We did not outline the particular areas of inspection. Jim was surprised the inspection turned out as well as it did.

1973 The consensus of the inspection team was that the integrated organization was working quite well.

1974 It was not just a consensus, it was unanimous. He agrees with Gallagher's assessment that the program itself on paper has always been adequate. Barbara tries to challenge the weight of a 5 day inspection to support Jim's testimony.

1975 Jim said through 1975 he had given their QA implementation a passing grade. The purpose of the inspection was to determine whether things had gotten worse - it showed that things were better.

1977 Would you agree that in making your reasonable assurance judgment, that you did not place much weight on the five years of deficiencies that led up to the soil settlement problem.

1978 Answer - It was considered very carefully. It was given more weight than the 5 days of inspection. The only way the 5 day inspection could change my thinking was in a negative direction. [He explains that he had already arrived at a positive conclusion prior]. Up through the beginning of 1981,

PROGRAM HAS ALWAYS BEEN GOOD

GALL + KEPLER



Barbara is still struggling with his answer that he gave more weight to the period prior to December 1979 than the 5 day inspection.

1981

The record shows that we carefully weighed the effectiveness of the quality assurance program following 1982 notification of the soils problem as evidenced by my February 15 memo. Jim reiterates the history of what he did before December 1979. In October or November 1979, based on a recent inspection, we reassessed the situation again. Region III did it, NRR did it and I&E Headquarters did it. We concluded that the overall QA program was still effective.

LBXIA

50.55e
we looked at 80-81

1983

A careful look was given to the history of the project. Do you think NRC looked carefully at the period 1980 and 81 - Yes. Why aren't there any reports in the record about that period.

1985

At the top, I feel its necessary to make a statement that Barbara is inferring that we're not providing information in 50.55e reports and I state that we would be very glad to address whatever it is she wants, if she'll tell us what it is.

50.55(e)

A

1986

I again urge her to let us know what it is she wants to talk about. Keppler views 50.55e's as fairly routine.

1987

But if the Board wants it, he'll be glad to get it. Miller points out that the 50.55e's have been routinely provided to

the Licensing Board. Miller says there was a Zack inspection report which is Consumers Power Exhibit 2 and the I&E inspection report that deals with the inspection with QA activities with respect to soils insofar as the qualifications of the geotechnical engineer were concerned and that is attached to Gallagher's testimony on Contention 3.

1988 Miller says that's all the inspection reports he is aware of that deal with soils or soils related matters. Judge Bechhoefer says, we got the 50.55e reports but we did not routinely get all I&E reports.

1989 I again volunteer to talk to Barbara about the 50.55e reports [She had from us during this period a list of all of them - and I say so on 1989].

1990 Miller discovers another possible relevant inspection report.

1991 December 8-11, 1980 which also dealt with programmatic quality assurance matters. I state that that is attached to Contention 3.

MIDLAND SUMMARY OF TRANSCRIPT

1992 Kepler volunteers that Consumers hired Management Analysis Corporation, a consultant. After the SALP meeting, I met with Mr. Selby and encouraged them to bring in an outside consultant. We are now reviewing the Mack report, generally the findings are favorable.

Mack →

1993 The Chairman asks what kind of consulting is being done at Palisades. Answer - it was a comprehensive one-shot deal, not a continuing basis.

1994 Jim's recommendation with respect to Mack at Midland was also a one-shot deal. Jim recommends against a continuing series of evaluations [I don't think he says so, but at that point, the consultant would be doing NRC's job].

1995 Kepler cannot put a time on the frequency of audits by independent consultants.

1995 Barbara starts to get into other false statements that were considered for materiality prior to drawing up the December 6th order.

1996 I ask is she now switching to Contention 1.

1997 Barbara notes that two key problems for Consumers was over reliance on Bechtel and a failure to identify generic problem. She asks Kepler whether in the response to Question 23 did CPC identify Bechtel quality assurance program as one of the main causes for the soil settlement problems. He did not know.

- 1998 She inquires concerning attachment 2 to Jim's testimony. First area is management effectiveness.
- 1999 She asks him about subjective judgments. She gets him to admit that a good way to support a subjective judgment is with examples.
- 2000 She says that the positive comments are not backed up by example.
- 2001 Keppler agrees that the adjective's capable, assertive and positive attitudes are subjective judgments. She asks, for example, then she states one "licensee management controls were judged to be effective". At pages 2001-2002 he gives "sort of" an example.
- 2003 Barbara gives a speech about Consumers getting ready for the inspection. Keppler answers, I think it is human nature when you are going to have an exam you put your best foot forward.
- 2004 Jim says I don't think you can snow the 9 people I had at the site. Barbara asks, how did you pick out the area of piping and support.
- 2005 He picked it out randomly, but based on his experience at other sites. The 7 of 10 where he had problems had already been installed. Then she goes into difficulty of inspection when its already installed.
- 2006 You can inspect a pipe just as easily after it has been installed. In response to the Chairman's questions, Jim says the area pipe hangers and and restraints is an area that much is being learned about at a very rapid pace.

- 2007 We are finding problems in the design and installation aspects of this work at almost every site we go to. We have here a very talented inspector [E.C. Yen].
- 2008 The Chairman says essentially shouldn't we be doing better, and Jim says I don't have an answer. Jim says the problems have as much of their source in design as they do in quality assurance.
- 2009 Jim said the inspector did not consider these problems too significant. We considered a stop work order but decided on an immediate action letter. She asked him about pattern of stress analysis calculations being admitted or done incorrectly in 5055 E reports he does not know.
- 2010 He does not know about the FSAR being submitted early.
- 2013 Barbara asks him about paragraph B on page 5 of Attachment 2. Is that similar to the type of question where FSAR commitments will not be translated into field documents. They ask is this by analogy the same type of activity.
- 2014 Jim says yes. In the inspection report, three examples were given, two of which involve out of date specs where new copies had been issued and the people in the field were using an outdated copy. And the third case given was for design calculations. Jim does not view this as an indication that the programmatic aspects are at fault. He looks at this as an isolated problem not a major problem.
- 2017 Jim makes a distinction. The item of non-compliance sited in the soils order had to do with the translation of requirements into design specifications. Here - the pipe support systems -

Keppler

- 4 -

was a document control problem, one of keeping documents current. That's a great distinction.

2018 Jim says his judgment on reasonable assurance carries great weight.

2019 But it is not a one man decision. Judge Decker clarifies that the Licensing Board, the Appeal Board, etc. are also involved.

2020 Barbara asks him if it isn't a subjective judgment - about reasonable assurance. He says there is a balancing consideration that's given to the information.

MILLER CROSS-EXAMINATION BEGINS

2021 He establishes that Keppler is very familiar with Midland and that QA requirements have changed. That they have become more stringent.

2021-22 Miller reads him his answer in 1974 about management.

2022 Miller asks him from now into the future into operation.

2023 Are you able to evaluate whether management's commitments will be kept. Jim tells him I don't know what your looking for.

2023 Miller strikes out about three times. Jim doesn't know what he's talking about.

2024 Miller strikes out again with respect to the Phillip Crosby organization and again with respect to an augmented inspection effort.

2025 Do you keep the number of non-compliances identified per inspection man-hour. Yes, and its reasonably comparable to other sites. Miller says the number of quality problems that have been identified over the years are reflected in Board

exhibits 1A and 1B. Jim agrees that in none of those instances was CPC cited for failure to report the issue to the Nuclear Regulatory Commission.

- 2026 Miller strikes out again. Can't get Keppler to agree that CPC has aired on the side of conservatism in submitting 5055E reports.
- 2027 CPC has complied with ALAB-106. He asked him about CPC Exhibit 4, a letter from Myron Cherry to Keppler, November 1978.
- 2029 Miller hands out Consumer Power Exhibit 5 marked for ID. A letter dated December 14, 1978 from Keppler to Cherry.
- 2030 In order to respond to Cherry, did you make an investigation. Jim says we made an investigation, but it wasn't prompted by Cherry. Did you respond that deficiencies located were isolated and did not represent a serious breakdown in QA.
- 2031 Keppler agrees. Board Exhibit 1A was made in preparation for your meeting in Washington. He agrees. Miller asks with respect to 13 on Board Exhibit 1A - he reads, the problems are not indicative of a broad breakdown.
- 2032 I object on the basis of the fact that Miller has stipulated with respect to QA before December 6, 1979. Miller reaffirms that he is standing by the stipulation.
- 2033 Miller says he is trying to get at Barbara's contention that you have five years of bad QA vs. a five day inspection.
- 2033 The Chairman tells why he introduced Exhibit 1A through 1D. First he thought it relevant to QA after December 6 and to avoid arguments, he wanted it in anyway.

- 2034 I again asked Miller, are you standing by your stipulation. He
says, absolutely, so I withdraw my objection.
- 2035 Miller asks Jim to look at page 13 of Exhibit 1A and gets him
to admit that this was every inspector's opinion [without
looking at it right now I assume it says that there was no
broad breakdown in QA]. Miller refers to a special inspection,
paragraph 6, page 10, Exhibit 1A.
- 2036 The above inspection found QA implementation adequate. He
comments that none of those inspectors had a background in
civil engineering. Miller marks for identification CPC Exhibit
6, letter dated 12/18/80 from Keppler to Cook.
- 2037 Concerning SALP, page 3 "the performance at Midland was
considered adequate" concerns implementation.
- 2038 Miller identifies Gallagher as one of the attendees at that
meeting.
- 2039 Miller asks Jim, are you familiar with the anchor ^{BOLT}~~beam~~ problem.
He says not in detail, but they were fabricated by a vendor.
- 2040 Miller is not getting anywhere. He gets three "I don't know's"
in a row. He asked Jim to describe the difference between
violations, infractions and deficiencies. Jim says its
historic, violations were the most serious, infractions didn't
affect safety but could and deficiencies were minor items
having little relevance to safety. Now we have six severity
categories: one is most serious, and six is least serious.
Violation probably fits into levels one and two and part of

- three. Infraction fits part of 3,4 and 5 and deficiency is akin to level six.
- 2042 Miller gets some detail about the above identified exhibit - number of points, etc.
- 2043 Consumer Power Exhibits 4,5 and 6 are admitted. Miller asks him whether the word "breakdown" appears in Volume 10 of the Code of Federal Regulations other than Section 5055E and I object.
- 2045 The Chairman limits it to part 50 and I object again.
- 2046 Jim says he doesn't know. Jim agrees that 5055E establishes the criteria by which licensee is supposed to report certain events to NRC. Miller again agrees he is sticking by his stipulation. Does NRC check the 5055E to see which subsection the licensee is reporting under. Jim doesn't think so.
- 2047 He directs Jim's attention to page 3 of his testimony. Miller tries to get Jim to admit that if Consumers had known of the soils problem, they would have stopped work. He strikes out again. Jim said, I'd like to think so, but what about Zack.
- 2048 Jim agrees that if the QA program had been totally ineffective they would not have detected the diesel generator building settlement [Miller is really reaching - we had the impression at the time that if this is all he has to talk about he's demonstrating the weakness of his case].
- 2049 Isn't it true that NRC knew about Zack before being informed by the worker. Jim doesn't know, so he tries to refresh his recollection by showing him Consumers Power Exhibit 2.

- 2050 Jim doesn't know whether the resident inspector was informed. He doesn't know whether a Zack employee told Zack, Bechtel or Consumers.
- 2051 Miller is still reaching, getting nowhere. He asked did the allegor go to the NRC and describe the very same problems that Consumers had written non-conformance reports on, or were they different. Jim says I think they were more extensive.
- 2052 NRC's biggest criticism was that there had been meetings between Consumers, Zack and Bechtel and they weren't getting the problems solved. Jim agrees there had been some replacement of Zack management and 100% over inspection instituted. He still doesn't know if his resident inspector was aware of the problem.
- 2053 Miller gets Jim to admit that Ron Cook never reported the problem, but he hasn't yet established that Cook even knew of the problem. MPQAD is the integrated organization.
- 2054 Byrd is the head of it, and Byrd reports to James Cook, V.P. And Cook has cost and schedule responsibilities. Is that reporting chain in accordance with Appendix B. Jim says, I think so. He says that that chain is not a problem.
- 2055 At the time of the inspection, was he aware that we were considering a stipulation. He did not know. He knew one was being done when he was preparing his testimony. Question - Did you prepare your testimony before or after you knew there was a stipulation contemplated. He says he does not recall the

events. He was absolutely not involved in the
of the stipulation.

re what you decided, or whether there was a
or not. Miller reads the last paragraph of the
and it reads the same as the last paragraph of his
Jim concludes, I must have done my testimony first.
ulation was based, as far as you know, on all the
testified to in your written testimony. Jim
Miller shows him attachment 4 to Gallagher's testimony
on 3. A letter from Keppler to Cook, February 2,
ch is attached inspection report 8101. That's the
ferred to in your prepared testimony on page 5.

Miller says the qualification problem of the
technical engineer related to his formal education.
eally reaching here. He says the NRC believed that
alifications were more important than practical
here. Jim says I don't know. Then he says in
2, page 2, you say that the licensee focuses
on academic achievement.

ght, but that's a different area. The latter had to
ctrical. Then come the attorney objections. I

Miller got anywhere with that one.

talk to Gallagher about it.

script.

7-14-81

all of H

2063 → 2170

SUMMARY OF MIDLAND TRANSCRIPT

- 2066 I indicate that Cordell Williams is present.
- 2067 Scheduling of witnesses.
- 2068 The Board indicates that attachment 4, 5 & 6 to Gene Gallagher's testimony prior to Dec. 6, 1979 "Are being incorporated into the record". They were not in fact, bound into the transcript and I don't think they were at this time marked as exhibits, but later in the proceeding, he admitted all of the attachments except 15, 16 & 17 (15 is the modification order; 16 is the answer and he said the Board can take official notice of those; 17 is his statement of professional qualifications which was duplicated.)
- 2070 At my insistence, the record reflects that all parties stipulate to the admissibility of NRC exhibit 1 (I think I had some misgivings which was not shared by Applicant and Intervenor that the document had been correctly admitted, I don't have 7/13/81 transcript with me right now).
- 2070 JAMES G. KEPPLER RESUMES THE STAND.
- 2071 Barbara raises preliminary matter about whether Keppler knew about the stipulation ahead of time. Miller volunteers that the exchange was at pages 2055 and 2056 (right at the end of the testimony on 7/13/81).
- 2073 The Chairman is telling Barbara that she can do what she wants to do on cross-examination.
- 2074 Miller directs Keppler's attention to page 13 about ^U exhibit 1.A which is attachment 2 to Keppler's pre-Dec. 6, 1979 testimony.

NRC x1
stip

Miller cross

In the top paragraph six problems are listed. The paragraph is entitled SUMMARY AND CONCLUSIONS. Keppler agrees that the first three of these took place prior to the show in 1974.

2075 Keppler agreed that the licensee made certain commitments with respect to Q/A regarding the 1974 problems and that they have kept those commitments - "As a general comment yes". Keppler agreed that there has been a continuing evaluation of Q/A in a positive sense since 1970 and the Q/A program since 1974 is "far different than it is presently".

2076 Keppler agrees with the above.

2076 Keppler states his instructions to Williams prior to the May 19, 1981 inspection. He says he wanted a very penetrating inspection to determine whether the revised Midland Q/A organization was working as it was described to us earlier.

2077 And to determine whether the problems were being dealt with in a responsible manner.

2078 Did you encourage him to be very rigorous in the inspection effort? Answer was absolutely. Keppler agreed he did not ordinarily meet with inspectors before they go to a site for routine unannounced inspection. Keppler also agreed that his inspectors knew that he was going to be at the site at the end of the inspection.

2079 Keppler agreed that inspection reports ordinarily do not contain positive comments. Miller directed Keppler to Staff exhibit 1 [which is the detailed inspection report concerning the May 19, 1981 inspection - it's dated July 10, 1981 and it is designated as inspection report #8112 and it should be differentiated from attachment to Keppler's testimony which was the summary of the results of the inspection].

2081 Keppler tells why Staff exhibit 1 includes both positive and negative findings. Because this was to be more extensive than the normal report. Miller is painstakingly demonstrating that Staff exhibit 1 contains some areas of discussion that were not attached to Keppler's testimony. He specifically referenced design control of block walls and as I pointed out later, he was wrong. Keppler did address that in his testimony.

2082 [So was Keppler wrong, he agreed that it was contained in his testimony and it later developed that it was.] Keppler agrees with Miller's statement that Staff exhibit 1, in fact, contains inspection results for a number of inspection items that are not referred to in attachment 2 to Keppler's testimony.

2083 Miller is trying to rebutte Barbara's point about this being a five-day inspection as opposed to many years of bad Q/A and he developed from Keppler that all of CPC's records are available. Keppler says he tried to concentrate on the period of time from Summer of 1980 until the present because that's when the new Q/A organization was formed.

2084 Miller develops that CPC may disagree with some of the items of non-compliance that the Staff has designated and Keppler agrees that that does not reflect the bad managerial attitude.

2085 Keppler agrees that changes to the FSAR routinely lag changes that have been implemented at the facility - at any facility.

2085 Board questions begin.

2086 Judge Decker ask if Gallagher has been replaced? Keppler indicates that he has not been replaced [I think that as a result of comments from Gene, Keppler later changed his testimony]. Keppler

Corrected at 2107

trends

says we'll spend whatever man-years it takes with respect to the remedial actions to satisfy ourselves that it has been done right.

2087 Keppler says Region III analyzes ~~trans~~ trends and non-compliance. We track the 10 C.F.R. 5055(e) Reports. Decker presses him for specifics. Keppler says we plot the data on a monthly basis and keep track of the records over the last 5 years in non-compliance data for all plants in Region III.

2087 Decker refers to attachment 7 of Gallagher's pre-Dec. 6 testimony. Page 17.

2088 Keppler says we, the NRC received non-conformance reports but not audit reports. The Board ask what kind of communications Keppler has with resident inspector? Keppler says he provides the monthly report and a separate inspection report for any particular problems and in addition to the resident inspector, inspections are done by people out of Region III who write separate inspection reports.

2089 One of the responsibilities of resident inspector is to keep a trend of problems going on at the site. Keppler states that he doesn't know of any substantive item of non-compliance that Cook has found at the site that has not been reported by the company.

2089 Keppler has asked his general plans for giving special attention to remedial soils work.

2090 He says as the detail procedures are finalized they will be carefully reviewed in accordance with the Q/A commitment but he wants his inspector to observe activities in progress to insure that the program is being implemented.

2090 Decker asks why does everyone talk in terms of Q/A, why don't they talk in terms of doing it right in the first place? At the bottom of 2090 Keppler refers to Appendix B. I don't think I will need his answer for the findings.

2091-2 Keppler says he wants the Board to know that in 75, 76 & 77 - our earlier inspection programs had been cut because of man-power constraints in the areas of foundation received little attention by the NRC.

Cause

2092 Keppler says in reality, we put very little effort into looking into that work back at that time - those dates.

2093 Judge Bechhoefer refers to the augmented inspection program that was in effect for a while until the resident inspector was appointed. In CPC's exhibit 6, which is the salp report, there is a statement on page 3 that the NRC plans to increase inspection effort. Keppler indicates at that period of time covered July, '79 through June, '80.

2094 I don't think the above leads anywhere, it was just a clarification by Bechhoefer.

2094 Keppler volunteers a comment about salp. This was the first year we issued salp reports.

SALP

2095 Keppler says not only was it the first year, but it also easier with an operating plant to get into details with respect to licensee performance. The only required reports are the 5055(e) reports or Part 21 reports [I think at this point, he might be talking about plants at the construction permit stage]. Keppler says that if you look at the reports all over the U.S., you would find the construction salp reports were not very exciting. Performance of licensee with operating reactors, its much easier to get a ~~fight~~ for their performance.

SALP

feel

meatier

2096 The second year of the salp report will be "meatier" with the one year of experience.

2096 The Board asks Keppler his response to a problem in salp that had been noted before and he said salp is just not detailed enough to draw inferences. He thinks the salp appraisals on construction were "very shallow".

SALP

2097 The Board Chairman refers to a statement on page 16 of Staff exhibit I concerning hiring of Q/C inspectors and training with respect to soils settle remedial work. He wants to know since Q/C inspectors were not adequately trained in the past, is there anything the NRC can do to make sure it doesn't happen again in the future.

2098 Keppler says it would be ridiculous before work starts if we don't make a very thorough review of the problem of the training of the Q/C inspector - "and we will". We will take whatever action is 2099 required to assure the job is done to our satisfaction.

we will watch

2099 The Board refers to page 14 of Board exhibit IB. Indicating that Bechtel and CPC were insensitive to the significance of isolated events or possible generic application of those events. Keppler indicates with respect to a question about training analysis program that there was still room for improvement.

2100 "I think in my testimony I still pointed to the fact that we feel that the trend analysis is still where we feel it ought to be". The Board ask what else could we do with respect to trend analysis and Keppler says there are other ways to deal with the problem. With respect to recurring problems, if they were brought to the level of someone at the corporate management chain the first time they occurred, it would

All contra 2103

I think he said "NOT"

be a way of focusing attention on the problem more quickly; that he has seen that done in some utilities.

trend analysis

2101 Keppler is asked whether or not we require trend analysis. He says Appendix B regulations require that you take effective corrective actions on problems. To do that, you have to have some way of evaluating causes in correcting them [I think Gallagher told me that corrective actions is criterion 16].

program

TRENDING

2102 The Board, again, ask Keppler is there any improvement that you might recommend in CPC. "I think we're still not happy with where the ~~training~~ *program* is. We have made that point clear in our testimony." But on balance, we feel that overall the licensee is dealing with the problems as they occur. "I think a good example . . . is listed on pages 17 & 18 [of Staff Exhibit I]." The trend results ^{are} not being handled properly."

Keppler tells Bd to STAY OUT OF IT

2103 Judge Decker raises a question How can you rely on trend analysis to solve a problem of isolated events. It seems by definition you can't do that. The witness says he thinks that trend analysis can pick up isolated events and put them into contexts.

2104 The Chairman notes that on the front page of the notice of violation [Staff Exhibit I] says that appropriate site managers have not established comprehensive corrective actions in response to the identification of adverse quality trends; and he wants to know if there is any way "that result could be encouraged". Keppler's answer again indicates to the Board, leave it to us. We are waiting for a response from Applicant and we'll meet them and decide what, if anything, additional needs to be done.

Board wants to know what can we do?



2105 In response to the Chairman, Keppler says there are ways to eliminate this type of problem. The problem has existed for a long time and we are very critical. We are still monitoring it and calling attention where we see problems with it. "We don't feel that the situation is such that the company cannot carry out its activities properly, but it is an element that should improve matters further and we will continue to follow it until it is done. Question. Is there anything we can do by virtue of a ruling to assist your efforts in this regard? [The Board has been pursuing this for a number of pages.] Keppler asks for a chance to think about it.

2106 Keppler again asks about his proposed solution to trend analysis problems. He doesn't have any strong recommendations. The Board's interest is helpful to the Staff. He doesn't know of anything by way of a requirement or condition that is practical to place on the licensee.

2107 He just says we have followed this problem for a long time but we will continue to follow the problem and be persistent in calling it to the attention of the licensee. Keppler corrects (this is page 2107) Keppler corrects his statement about Gallagher leaving, he says we have 3 full-time civil engineers in the office. He gives further qualifications.

2109 The Chairman asks with respect to the new Q/A organization, aren't we eliminating one level of review that being the overview that CPC used to give to Bechtel (he clarifies that he is excluding for the moment the over-inspection program which is a little different). Keppler's answer is that the overview program that existed before by CPC was done in his view to compensate for deficiencies in the system.

2110 Bechhoefer reiterates that he has not referring to over-inspection he was using the word overview in the sense that the normal relationship between the utility and another organization which is performing Q/C functions. In that sense is there less Q/A or Q/C review now than earlier? Keppler says he doesn't know.

2111 Bechhoefer asks Keppler, how you handle 5055(e) reports? He clarifies the report submitted pursuant to ALAB-106. Keppler says they are reviewed on a sampling basis.

2112 We do not do a 100% review of those reports. Midland is the only site where non-conformance reports are provided directly to the NRC. Others are reviewed during site visits.

2113 The Board refers to attachment 6 to Stamiris contention 3 which was the first 5054(f) request (dated March 21, 1979). Then the Chairman refers to attachments 4 & 5 to Gallagher's pre-Dec. 6, 1979 testimony (which is Stamiris exhibit 3) and indicates that is what you translated to headquarters I guess for discussion with NRR as to possibility to taking further action. Bechhoefer is trying too hard to reference documents that support what the NRC did at this time; at this point I am not convinced that they are that necessary to the proposed findings.

2116 Redirect examination by the Staff. I direct his attention to his own testimony, attachment 2, page 10 as specifically referenced controlled to block walls (I was just correcting his prior testimony to show that the block walls were mentioned in both Staff exhibit I, which was the detailed report of the May inspection; and in his attachment to his testimony.

*Chairman apparently
wants some history
prior to 12-6-79*

2118 He says that he, in his previous testimony, he could not recall when he first learned about the stipulation and on reflection he now realizes that he was aware of it prior to the inspection.

2119 He says he, the fact that CPC wanted to know his conclusion before they would enter into stipulation, did not affect his testimony in any way.

2119 Recross-examination of Keppler by Marshall.

2120 Recross by Stamiris. Barbara develops that I sent Keppler a copy of the proposed stipulation.

2121 He does not recall that it was marked confidential. Was there a meeting in which you and Mr. Paton and the other lawyers were supposed to attend. After the inspection at Midland, Mr. Paton had arranged to come out to my office to help me prepare testimony and when he got back to the office, he learned that I had arranged a meeting with CPC lawyers to talk about a stipulation. When I learned of the meeting, "I told him I didn't want any part of the meeting". Keppler said he got back to his office on May 28, 1981.

2123 Bechhoefer asks her what she's driving at?

2124 Barbara says she raising these points, because she was under the distinct impression that Keppler refused to attend the meeting because of her communications that were relayed to him that morning and the Chairman responds, "So what?" Bechhoefer again asks her what difference does it make whether he attended the meeting?

2125 Barbara says that it relates to his timing on this decision on reasonable assurance. "I was told in our afternoon conversation of May 28th, when he called back, that his judgment had not yet been made

but Mr. Miller had said on the phone, the day before that, that Mr. Keppler had made the decision and it's important to pinpoint when that decision was made.

2127 Despite Miller's objections, Keppler says I'd like to answer the ladies' question.

2127 Keppler says he had reservations from the beginning (^{about} the stipulation).

2128 He says he assumes that lawyers enter into stipulations for resources control, etc. Keppler says he told Barbara that he was concerned that entering into the stipulation might result into a number of matters not being aired for the benefit of the board; that perhaps we were appropriate for consideration of this type. And that even though the decision was made to enter into the stipulation, he was going to make the available to the Board all the history of the problems that have occurred at Midland site, so that the Board could have that information. He did that for the Board and he did it for Barbara. It was never his intent to sit in on the stipulation meeting. He had not written his testimony yet.

2129 He wanted to get his testimony done first. The meeting about the stipulation was strictly a meeting between lawyers. The stipulation made no difference to me in terms of preparation of my testimony.

2130 Discussion of Barbara's wanting to develop the FOIA request for the stipulation.

2132 The Board gives Barbara permission to rely on the Commission ruling in respect to FOIA in her findings (I just got a copy of it, it's dated July 6, and since it denies her request, it isn't going to do her much good in the findings.

2134 End of discussion of FOIA request.

2135 The Board ask Keppler when with the respect of the inspection were you aware of the stipulation? Keppler says he was aware of it and so was the Staff. I cut off Keppler when he begins to get into the content of the document.

2136 And members of the Staff who took part in the inspection were aware of it. Were any of your conclusions affected by the content of the proposed stipulation? Answer. In no way.

2137 It could not have even subconsciously.

2138-9 Barbara makes this unusual reference to 1 or 2 more questions she wants to ask Keppler, but she doesn't want to ask him now.

2140 Keppler clarifies that he had no knowledge of any FOIA request before the date of the his examination.

2142 Recross of Keppler by Stamiris.

2144 Barbara asks Keppler is he aware of the fact that Cook said if the soil settlement matter is not resolved by the end of the year, the plant is not going to make it on schedule. He is generally aware.

2145-6 Keppler denies that he is influenced by anything like the above statement by Cook.

2146 Keppler says I think I have already committed far and above how I feel about this project when I said if their performance does not improve at Palisades, I will ^{NOT} recommend a license at Midland. And that's about as strong a statement as you can find from a regulator; and if I were feeling external pressures, I would not be tempted to make a statement like that.

Palisades

2147 Keppler responds that [to the Stello v. Keppler type question], that when the adequacy of proposed resolution is in question, stop the work until you know it's going to be done properly.

55(0) 2149 Keppler says what they do with their analysis of 5055(e) reports, is not remarkable, he just looks for problems and tries to correct them.

2152 Barbara can't find the documents she wants, I refer her to page 2 of attachment 2 to Gallagher's response to contention 3 (report 78-20). Reasons for investigation - Barbara's asking for the extent of investigation into FSAR consistencies was it limited to soils? Yes, it was limited to soils. Then she wants to know if we have subsequently investigated other inconsistencies. Responses is yes, it is an ongoing inspection effort. It is something that is routinely done.

2154 We have not found any reason to suspect that FSAR contains a lot of glaring errors. Expect the soils there's no question there were glaring errors. The next few pages is on the same subject, Barbara doesn't make much progress.

2157 Barbara refers to the Moffett Report, and then asked whether the resident inspector is placed in a different difficult position.

2158 Keppler says refers to the possibility of "capture" by a licensee, and making sure that the resident inspector maintains his objectivity. We knew this when we went into the resident inspection program but unbalanced it worked. It's not a problem in Midland.

2159 We have a rotation program to avoid the problem of capture and its every 3 years. Ron Cook was just extended at Midland from 3-5 years. More questions by Barbara on this same line.

- 2163 Examination of Keppler by Zammerin. He asks whether Cherry did not make a similar allegation in respect to Cook.
- 2165 Keppler says when he received Cherry's letter, the Office of Inspector and Auditor made an investigation and concluded that there was no wrong doing.
- 2166-7 Zammerin asks Keppler whether one of the purposes of his inspection was to find out whether or not he should approve the stipulation and he asked it in such a way that he doesn't get the answers he wants.
- 2169 Decker tries to resurrect Zammerin's line of questioning. Keppler says he did not approve the stipulation, was not asked to. Decker asked him if you were opposed to it, what could you do about it. He says he could make it known to his management, but he circumvented the issue as far as he was concerned, by attempting to provide the Board and all the parties with all the information that went into the considerations.
- 2170 He says he circumvented it because he felt that it was important for the Board to have all the information.

~~211-2553(1) Dine~~
~~211-2553(1) Dine~~

SUMMARY OF TRANSCRIPT ON MIDLAND

2172 Kepler had no contact with Mike Miller and no other counsel
 for CPC. Did you get a letter from Mrs. Stamaris, dated May
 26, 1981 in which she was attempting to have input into your
 Q/A decision. Yes. And you talked to her by phone and you met
 her at Midland after the inspection? Yes.

2174 Zammerin reads from the 3rd paragraph of the letter dated
 May 26,

 1981 [I don't know whether this is an exhibit or not], in which
 Barbara states I also wish to have this final input into your
 upcoming Q/A decision. He tries to get Kepler to say that
 Barbara was trying to influence him, but Kepler won't do it.

2175 Barbara is trying to get the letter in evidence; Zammerin is
 objecting and I said in fairness, it should come in.

2177 On and on about Barbara's letter, and she doesn't have it with
 her.

2178 After I say Zammerin is being fundamentally unfair, he attempts
 to turn it around against Barbara and says okay I will not
 object to it being admitted into evidence as demonstrating
 ~~A~~ possible improper attempt to influence the testimony of the
 witness.

2180 (Kepler says that the positive comments in Staff exhibit I were
 intended to provide the Board with as much information as
 possible and for no other purpose.) Sx1

2180 Keppler agrees with the Chairman's general statement that it is more important to build in quality in the project than to make sure that the quality exist through a Q/A or Q/C program.

2181 Generally, Keppler thinks that the Applicant is building in quality, the soils problem was in obvious acception.

Bechhoefer says do you have any reservations about your reasonable assurance finding? Keppler says no. That explains his answer on to page 2182. "The NRC won't issue an operating license to the Midland plant until it is confident that the plant has been built right, tested right, and can be operated right.

2183 I direct the Board's attention to Staff exhibit I, the last 2 pages is a document entitled EXHIBIT A, dated May 22, 1981. It's an immediate action letter concerning small bore piping - I report to the Board that as far as the NRC knew, the letter was being complied with but we have received information within the last hour, during the course of the proceedings, that it is not being complied with - and that we will report to the Board.

allegator

2185 I commit to inform the Board and the parties immediately by the most expeditious manner, as soon as we have further information.

2186 We are back to Barbara's letter and whether or not it should go into the record. I think the Chairman is indicating that the letter will be received and for what purpose it will be received.

2187 Bechhoefer says insofar as he can see now, [I don't think he has seen the letter yet] the only relevance would be to see whether an attempt was made to improperly influence him. The Chairman, again says that he can take official notice of an official agency position (referring to the denial of the FOIA request).

2188 The Chairman again talks about taking official notice of the denial of the FOIA request.

2190 Zammerin says okay, you can take official notice of it and then the question is whether or not it has any relevance or materiality.

2192 Zammerin volunteers to lay the foundation for Stamiris exhibit #4 [which I noticed is marked withdrawn, probably later].

2193 Keppler acknowledges receiving a letter, apparently, signed by a Mrs. Stamiris, that he discussed it with her later.

2194 There's some discussion of some attachments and then Barbara says it's going to cost me a lot of money.

2196 Barbara says I think the simplest thing would be to withdraw the whole exhibit and move on.

2197 KEPPLER IS EXCUSSED.

CORDELL WILLIAMS TAKES THE STAND. And states his qualifications

and education.

2198 Cordell was the team leader. Explains what that means.

2199 With this inspection difference from the normal inspection

**WITH
DRAWN**

one thing was that they stated positive findings as well as negative.

2200 Williams tells more about his history with the NRC since 1970.

2201 In response to a Board question Williams said that he was one of the major participants in the welding problem and has not been back to the site since.

2201 Judge Decker asks him if there are areas in MPQAD that he would be happier seeing improved. They have been identified in Section 1 of the report. He discusses 3 weaknesses characterized by one of the lawyers for the Applicant. One of those was attention and sensitivity to what we would characterize as indicators of adverse condition. A sensitivity that would inspire more timely response with an adequate corrective action. Next he says I think that the licensee has not been sufficiently responsive. He seems to be wondering a little bit but he said we didn't try to identify all of the reasons but we tried to identify areas where quality control personnel did not appear to have adequate experience in terms of their responsibilities for quality control inspections [that seems to be a slightly different subject than the one on which he started out with].

2203 This is in the area of electrical inspection, within the area of piping and piping support. Again, first with respect to electrical inspection, he goes to the qualification of the inspectors and with respect to piping he's talking about their

acceptance of components that turned out to be deficient. Again, he seems to be wandering a little. When you consider the size of our sample [I think he's talking about the extent of the inspection, we could say it was an adequate inspection].

2203 He summarizes the area that needs strengthening in our view "is more attention and should be imposed in the qualification of personnel doing first-line inspection.

2204 Tied to that it is our assessment that the licensee has not made sufficient use of its trending program.

2204 Continuing Judge Decker ask him about trending. He ask him whether when a Q/A person closes out a non-conformance report is there a place for him to show that he is considered the broader implications (getting at trending).

2205 Cordell says "Generally and quite specifically, the answer is yes. The licensee's response to criterion 16 (corrective action) is really fairly comprehensive. In some areas it's more brief than it should have been. One of the instances cited is where licensee looked at 22 occurrences and he did not identify a real cause. He came to conclusions that were not supported by the events themselves."

2206 The failures of the sort an experienced man would not make or a person with adequate time to review what he has should not make. We need more experience at lower levels so that the significance of these problems can be seen at the lowest possible levels, so the manager who has to make the decision is well armed to make the decision. We are saying there is simply

not enough depth recognizing that the code is not highly specific. Reference to Regulatory Guide 1.5(e)? in the ANSI Standard is N-45.6.

2207 Judge Decker asks him also are there any specific things that you think this Board might be able to do to assist you in this area. Cordell says the hearing is enough. Then Cordell volunteers a little attack on the Applicant stating or inferring that the NRC doesn't know what it's doing in this area and the implication is that we know what we're doing; Zamarin bitches about the witnesses speed and I get permission to give him a sign with a great big word SLOW written on it. Cordell says that the Q/C inspectors, particularly in the electrical area did not have adequate experience.

2209 Cordell is asked how is NRC going to put emphasis on the soils area in the future. He says it's too early to draw a definitive program but we plan to give it more attention than the routine program calls for. In fact, we will probably have the equivalent of a resident inspector in terms of his involvement in time (note that I said "the equivalent").

2210 He then explains a little more how much time he's going to spend

on this problem (maybe 2 days on the site and 7 days preparing).

2212 Cowan ask Cordell to explain his comparison of other plants in Region III to Midland. He says that the subject of adequacy of experience and education and qualification of Q/A and Q/C

*Resident
Inspector*

personnel is one that has been addressed in nearly all plants and the problem is not worse at Midland, but it is a problem. Bechhoefer refers him to page 9 of the report itself (I think he's talking about Staff Exhibit 1). Specifically Item 2.a.1.2 - the licensee is not routinely making comprehensive evaluations of root causes and where problems are identified, the licensee continues to work and did not always expedite and take affirmative action. Cordell says he thinks the answer is a more comprehensive procedure and instruction than that which is currently available. Also suggest careful reinstruction of managers who have to respond to audit findings. He says something in line 17-21 about trending which I don't understand.

2214

Cordell points out a poignant area is the 22 instances of non-conformances. "We should not have had to have pointed it out to them - someone at a fairly low level in the organization could not communicate adequately. He saw a standard form which he signed and moved on - he saw it 22 times and the significance was not made real to him. Given the proper procedures and the proper interest level" this type of things will be reduced. Is the problem with the lack of experience or are there enough people to do the work here. His answer is ambiguous. He says its not just confined to lack of experience and then he starts talking about the procedure.

- 2215 Backlog of matters to be resolved is dropping significantly. Cordell concurs with the conclusions of the inspectors that referencing page 16 para. 1.B that there has to be considerably more and better trained personnel to carry out the soils remedial action.
- 2216 Judge Decker then asks why everything is couched in terms of QA. Before things go bad the job has to have been done wrong in the first place and then it has to have been overlooked with QA. Do you concern yourself at all with the capabilities of the people who are doing the work.
- 2217 Yes. "We are compelled to describe the findings and activities at the site in the context of their commitments to the quality assurance program and that has a lot of promise here." Cordell then says he spent 4 hours talking to the production men not the QA men to the guy who decides who does what and where. In Section 5 of the Report, Mr. Yen identified real hardware problems. Demonstrates that he was involved with a man doing the design. Talked to the engineers to look at the hangar.
- 2218 Yen found out whether it was built right. In Section 3 they talk about crimping tools. These are not tools that QC people handle but the mechanic would do the work. So he says although it isn't explicit he stated in the report, we do deal with hardware. Judge Decker presses on, he is saying do the guys that do the actual work say that the QA guys got problems but it has nothing to do with me. Cordell responds that he has shared this concern.

2219 We spend most of our time with those managers who are doing the work. Cordell spent 6 or 7 hours talking to Rutgers (~~the~~ ~~the~~ the Bechtel project manager) and his site manager. Those are the people responsible for doing the work. My inspectors spent time with people who are actually doing the labor.

2220 In response to a Board question Cordell says that it was the unanimous conclusion of the team that there is sensitivity on both sides of the organizational structure (he is referring to production and QA). He suggests that is well integrated, homogeneous, they know what QA is there for and construction is responsive to them generally and vice versa. "I was impressed with the Staff that in place on both sides of the house at this time". NC Standard 45.6 and Reg Guide 1.5A are the requirements for the qualification of personnel that Judge Bechoeffler just asked about.

2221 Yes, we will be looking at those qualifications again. We would look at those Reg Guides and we'd look at his procedures for implementing them, then we will look at the individual to see in fact if he has complied with them in terms of their assignment.

2222 Bechoeffler asked the question that was referred to Cordell by Keppler about the integrated QA organization - does that mean that there is one less level of review of particularly QC activities. He is referring to inspection work and not program planning - the actual physical inspection of work performed.

MP.Q.A.D.

Cordell says there is no less and there is no more. What the integration achieved - what it did not do is reduce the layers or extent of inspection. It combined the resources in a fashion that inspections are happening more effectively.

2223

Cordell is continuing his answers. He said that it is better use of the capabilities and talents that are on board within both organizations. Now the chairman gets into whether Cordell had the proposed stipulation and whether it had any effect on him. Cordell said he had a copy in his possession at the time of the inspection. It had no effect on the way he conducted the inspection and he doesn't see how it could have. The things that we did were planned ahead of my knowledge of the stipulation. Several of the inspectors had copies of the stipulation during the course of the inspection.

Stop

2224

"We are also examining some of the parameters of the stipulation". Cordell indicates that maybe the inspector used the stipulation to get to a certain subject, but it certainly didn't change any of his findings. And if we all knew the personalities of the NRC inspectors you could understand that it's practically impossible.

2225

Cordell continues to respond to another Board question indicating that the stipulation could not have affected any findings. Its very humble and genuine opinion" that it had no effect. There are some fairly significant findings in this report. In fact we issued an immediate action letter.

2227 The Chairman asked whether the number and severity of the deficiencies discovered during the inspection could raise a question about whether there is reasonable assurance that the QA program is adequate and likely to be affected. Cordell's answer is that you have to take into account the positive findings also. He states he was not given any instruction to consider or not consider the proposed stipulation.

*reas
assur*

2228 Cordell responds that the ongoing licensing proceeding does not in any way adversely affect his regulatory obligations. The only difference he can see is that his instructions from Keppler to be more explicit than usual in this report.

2229 Cordell says he has no reservations about the reasonable assurance finding that's reached in the report (Staff Exhibit 1). In response to redirect examination by Staff counsel, he does not remember whether he had a copy of the stipulation with him. But several inspectors had one.

2230 Nobody told him that the applicant wanted him to have the stipulation with him during the inspection. I asked Cordell "Why did you have the stipulation with you during the inspection?". He again tells me why it wasn't important, but he doesn't answer my question.

2231 I again ask him why did you have the document with you? He tells me that Gallagher explored some of the contentions of the stipulation. He again denies that anybody told him that the applicant requested that he have with document with you.

2232 nd of Staff cross-examination.

2234 obody told Cordell he though it was improper to have the
tipulation with him. Cordell considered it to be a burden to
ave it with him.

2235 t the time we established the immediate action letter that's
ttached (I think to Staff Exhibit 1). There was some
isunderstanding as to the intent and purposes of that letter.
he matter was closed out late one evening and there was plenty
f opportunity for misunderstanding.

2236 n response to a question why a stop work was not put into
ffect - stopping work would not have resolved the problem. In
he areas where corrective action had to be taken it was
ecessary to continue working. We did establish by agreement
hat no new construction in a certain area would be issued and
ome of these other issues, in fact all of them, had been
esolved. It wasn't stopped but it was controlled.

2237 arbara asked a question about looking for matters that are not
he fault of the applicant because they are generic problems.
ordell says we look for what's at fault not whose at fault.

2238 he witness volunteers that Part 21 reporting requirements may
e responsive to what Barbara's looking for.

2239 nother device is known as a bulletin or circular (I think he's
esponding to what do we do about generic problems). Judge
ecker tries to define Barbara's question again - if there is a
law in a turbine provided by GE which you find, can you
nclude that in your inspection report concerning Consumers.

Barbara agrees that's her question. Cordell tries a different scenario. A valve in a system came from a manufacturer and we discover a problem in it in Region II and find that 3 or 4 other people had similar problems, can we address it. A bulletin is issued that addresses this issue and we are asked to go and look at our plant and see if it has that problem. So the answer is yes.

2241 Barbara is stumbling.

2243 I finally interject and suggest that Barbara is obviously not prepared, that we are not making any progress and I think we ought to either have the applicant interrogate or do something else.

2244 Barbara agrees. I repeat my suggestion.

2245 Zamarin starts. Cordell agrees with the conclusion contained in the Staff exhibit 1 - the inspection report. Are you familiar with the conclusion of Mr. Keppler's testimony with respect to implementation of QA after December 6, 1979. Yes, on page 9 of his testimony.

2246 He agrees with it. Non-conformance reports are most often, for the most part, written with regard to the individual doing the work. Is that correct in instances where it involves hands on work. Answer: Frequently. It's a fair characterization to say that when a non-conformance report is written with respect to work it is basically written with a view toward the construction itself, with a view towards avoiding repetition of that error.

on p 1 of the 7-10-81 cover letter

2247 In what way was the proposed stipulation a burden. Answer - the stipulation talked about things in the past and I wanted to talk about current matters. The stipulation in no way impeded his inspection. Zamarin then goes too far and tries to get the witness to say that a proposed stipulation would more likely lead you to be more critical in assessing performance of the licensee.

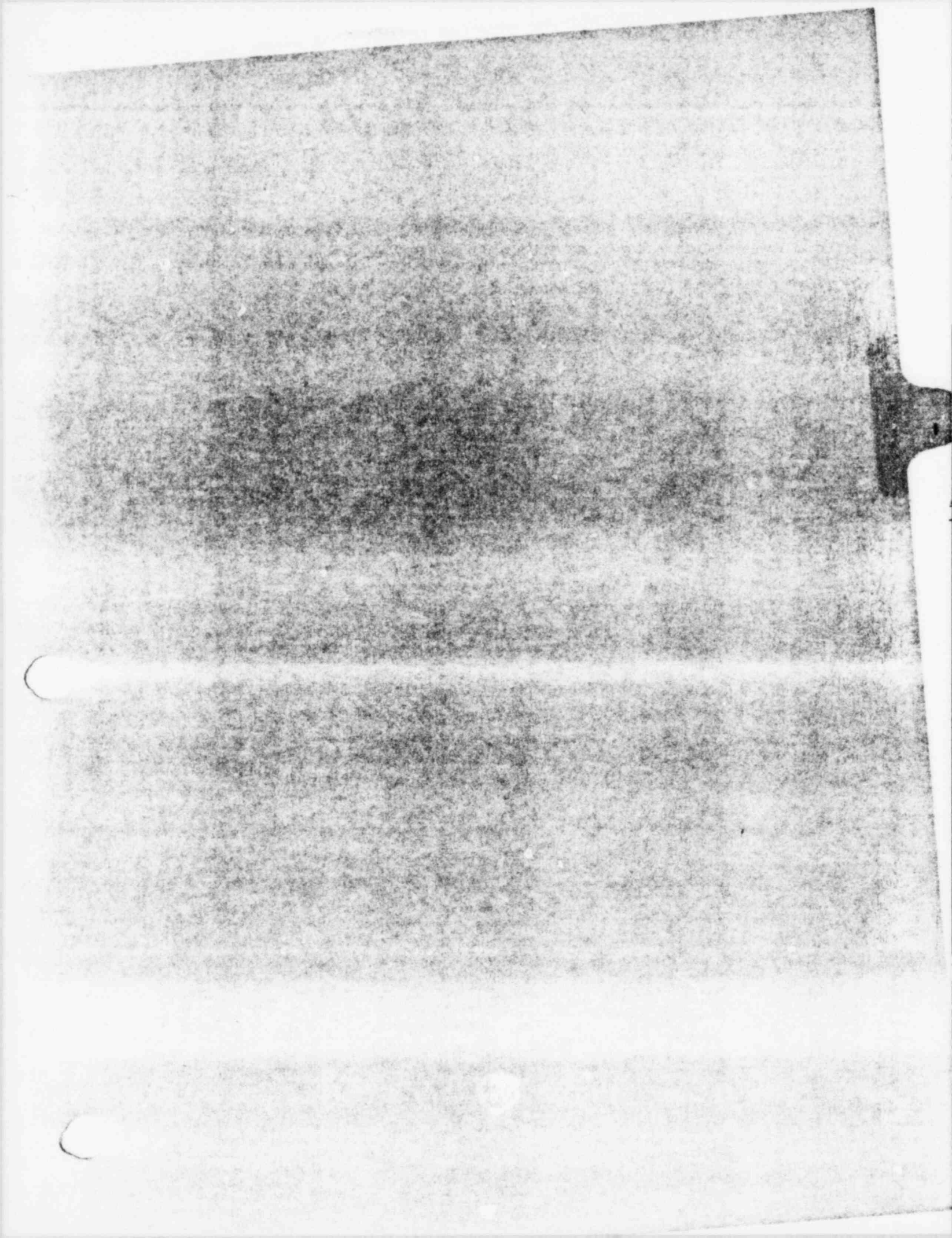
2248 The witness rejects that suggestion and says that it didn't make me go faster, it didn't make me go slower. It had no effect. Zamarin develops (at 2248) that the licensee will file a response to the report Staff Exhibit 1. Question concerning the 22 hold points.

2249 Don't you agree that most of those procedures had been completed before there was a procedure for hold points. And that when the QC inspector came along he saw that there had been no quality hold point and simply checked it off. Cordell said no, that has not been communicated to me. In fact, during the inspection they concurred with our findings and Consumers issued a stop work order without any participation from the NRC. Zamarin does not give up, he says, and were you also advised and asked the same question. Cordell said he is still not aware of it.

2250 The scope of the inspection covered more than just soils work. We examined the quality assurance program [generally]. He describes further what they did generally.

2251 Do you know anything about the pipe whip restraint problem. He
doesn't.

2254 The witness is excused.



7-15-81

~~8/17/81~~

Transcript Summary for Evidentiary Hearing in the Matter of Consumers
Power Company, Midland Plant, Units 1 and 2, held on July 15, 1981

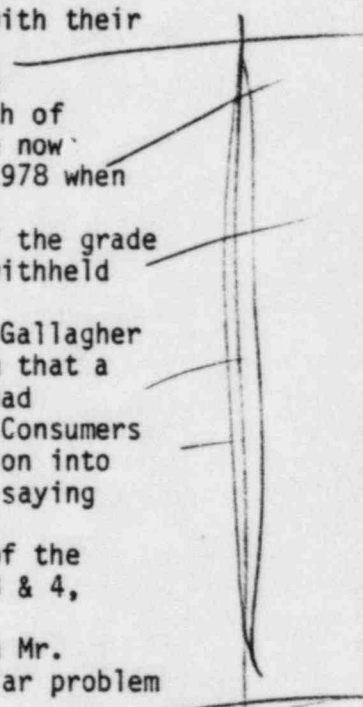
- 2259 Testimony of Eugene Gallagher continued. Zamarin indicates that information previously provided by Saunders had already been communicated by Consumers to the NRC. On 7/16/81, Saunders had been referred to as an informer by Mr. Paton. *allegator*
- 2260 Continuation of cross-examination of Gallagher by Stamiris.
- 2261 Questions about Stamiris Exhibit 3, page 6.
- 2262 Stamiris Exhibit 3, page 8.
- 2262 When is a 50.55(e) notification required? Generally for any deficiency which could adversely affect the operations of the power plant.
- 2262 Bases for investigation which resulted in report 78-20.
- 2264 Report 78-20 concludes that "there was essentially a breakdown or ineffective quality assurance program in the area of soils placement activities", the occurrence had been reported properly, and the safety analysis report did contain inconsistent or incorrect information.
- 2265 Stamiris Exhibit 3, attachment 3.
- 2273 Stamiris Exhibit 3, page 14.
- 2274 Gallagher believes that it is best to have "continuous and competent inspection throughout all aspects of the placement of fill activities. (2274).
- 2275 Stamiris Exhibit 3, page 15.
- 2275 The best way to insure that that is done is to have capable and competent people providing technical direction from the beginning.
- 2280 Bechhoefer - Gallagher's testimony itself (on pre-Dec. 6, 1979 problems) "does not appear to have much weight". Underlying documents rinder more interesting.
- 2280 Bechhoefer indicates that what is being focused upon is whether a specific occurrence represents poor managerial attitude and whether this has been taken into account in the current QA plan.
- 2282 Bechhoefer Board interested in item listed in Stamiris Exhibit 3, page 15-A-1.
- 2284 The general focus of question should be focused to the issue of whether there is a basis for the third paragraph of the Staff/Applicant stipulation on quality assurance.
- 2285 Stamiris Exhibit 3, pages 16 & 17.
- 2285 Questioning concerning page 16 of Stamiris Exhibit 3. Dames and Moore report is an amendment to the PSAR.
- 2287 PSAR is understood to be the manner in which the Applicant would proceed with construction and is relied on heavily by the Staff.
- 2288 If an attachment is prepared to the PSAR by a consultant, and the body of the report merely incorporates the consultant's report, the NRC assumes that the Applicant is committing itself

- to utilize those criteria. Discussion is in the context of the Dames and Moore Report.
- 2289 ~~If each and every one of the recommendations contained in the Dames and Moore Report were followed, the difficulties which have been experienced with the Midland plant would have been avoided.~~
- 2291 ~~The QA program that Consumers has had from the inception of the project has always been acceptable to the NRC. It has been with the execution and implementation of that program that we have not been satisfied over the years.~~
- 2291 The difference between Bechtel construction specifications C-210 refer to on page 7 of Stamiris exhibit 3 and the criteria of Dames and Moore report is ~~an example where the PSAR commitments as contained in the Dames and Moore report were not correctly translated into the implementing procedures of construction specifications. The FSAR should have accurately reflected how the construction implemented.~~
- 2294 The power company is ultimately responsible for the accuracy of the PNFSAR's. Stamiris exhibit 3, attachment 9, Consumer's response to 54(f) question 1.
- 2296 Stamiris exhibit 3, attachment 4, page 5.
- 2298 Bechhoefer - witness is not to discuss either the corrective actions which have been proposed or the alternatives which have been proposed.
- 2302 Amendment 3 to the PSAR. ~~Does not reflect poorly on managerial attitude. The fact that a number of inconsistencies between the PSAR and FSAR has shown in the specifications did exist, does relate to managerial attitude. It shows that there was not a dedication to adequate attention to details that are required for the Staff to rely on their work.~~
- 2305 To the extent that there are sufficient number of inconsistencies in conflicts between design documents and the basis which were submitted to the NRC, it reflects poorly on the management and is consistent with good managerial attitude with respect to good quality assurance principles due to management's lack of attention to details.
- 2307 Managerial attitude - an effective corporate and facility management needs to recognize the requirements for both qualified personnel and qualified materials to support the quality organization, the design organization and the construction organization. An effective management reacts responsibly to identified safety concerns and initiates corrective actions, without waiting for an expressed concern by the NRC or when identified by the NRC responses appropriately. In this case prior to Dec. 6, 1979 and based on an extensive investigation into the background as to why the settlement issue took place, it was my opinion that in a managerial attitude inconsistent with good quality assurance principles and full attention to detail, was a major contributor to the causes of this problem. Whether that was caused by m complacency or lack of alertness or lack of managerial

- confidence I am not certain but anyone of those things is an attitudinal problem that management did not correct.
- 2309 It would be more serious if the activities were undertaken intentionally. However, it is serious even if the only reason was lack of alertness, attentiveness, or competence. Had good management controls been in effect when the FSAR was being prepared, specifically with respect to section 25 on foundation problems, then we would have precluded these problems from occurring through their dedication to attention, their finding that design controls are in effect.
- 2311 The NRC, at the time of the 78-20 report, considered that there was a quality assurance breakdown with respect to the soils. The breakdown was substantial.
- 2316 50(e) reports are to report problems that are of a significant construction deficiency.
- 2318 Stamiris Exhibit 3, attachment 1. The licensee notified the NRC verbally on Aug. 22 through the resident inspector of the settling problem and then within 30 days he made a formal written report which is attachment 1 to Stamiris Exhibit 3.
- 2319 Despite the fact that the report the written report was submitted more than 30 days after the oral communication, Region III was satisfied with the time limits of the submission.
- 2321 NRC was worried that the apparent areas of contradiction is in the PSAR and the FSAR with respect to the soils sal you did not also exist in other sections of PSAR and FSAR dealing with matters other than the fill.
- 2322 Inspection Report 80-32. Stamiris Exhibit 3, page 9. Preliminary findings with respect to the final report 78-20 were presented to Consumers on February 23rd at the Region III office. 78-12, is attachment 4 to Stamiris Exhibit 3.
- 2328 Board would like to find out the witnesses view is of Consumer's corrective action on surcharge prior to the time that the NRC had completely evaluated it and concurred in it. Does that action reflect in anyway on managerial attitude? Gallagher - It is my own personal opinion that it would have been more prudent and responsible not to proceed with that construction action until the issues had been satisfactorily resolved with the technical Staff.
- 2330 Decker - Since the preload has already taken place, has that action prevented Consumers and the NRC from obtaining certain critical information concerning the state of the soil under and around that building? Gallagher - I'm not sure of that, I haven't studied the details of the surcharge program or the results of that to the extent required to answer the question.
- 2333 Cross-examine by Zamarin. Gallagher's opinion at present is that managerial attitude is consistent with implementation of quality assurance regulations with respect to soil settlement problems. That opinion is based upon the NRC Staff testimony assessing the present implementation of the quality assurance program at the Midland as well as his first hand knowledge of

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- 2334 the present quality assurance implementation. The testimony referred is Gallagher's testimony with respect to Contention 3. This conclusion is based on the appointment of a corporate officer to the Midland Project and his involvement in the day to day decisions and the fact that the company is providing sufficient direction to the project. The appointment of corporate officer satisfies Gallagher's concern with regard to adequate management controls. And his concern for attention to detail.
- 2335 And to regard to his concern that management be fully aware of the importance of details. Gallagher is also confident that the current Midland project quality assurance department is well established and working relatively well at his tasks. He also believes that the Bechtel both as the design and construction has established a strong leadership and understands the tasks that has to be done to comply with their commitments and requirements to the NRC.
- 2336 Gallagher first became aware of the settlement of the administration buildings's grade beam during the month of January, 1979 in the Bechtel office in Ann Arbor. He now believes it was probably during the month December, 1978 when he first learned of this grade beam failure.
- 2337 Gallagher has no basis to believe that the failure of the grade beam of the administration building was intentionally withheld from the NRC.
- 2341 There was many occasions since October of 1978 when Gallagher had come to the site for the first time to inform him that a previous incident on a non-safety related structure had occurred. The information was initially withheld by Consumers and was certainly relevant for continuing investigation into the diesel generator building. We have no basis for saying that it was initially withheld for what other reason.
- 2345 The NRC did not receive knowledge of the settlement of the administration building in the meetings of December 3 & 4, 1978.
- 2346 Gallagher was informed in a "casual conversation with Mr. Tubeson" that the administration building had a similar problem with settling.
- 2348 Decker notes that the difference between December '78 and January '79 is "immaterial" in view of the fact that certain people in Consumers according to Gallagher were aware of the problem in August of '77, specifically Mr. Tom Cook was aware of the problem at that time.
- 2353 Page 10 of Attachment 4 to Stimiris Exhibit 3. In report 78-12 the NRC had erroneously listed two items with respect to the administration building as quality assurance deficiencies. This was withdrawn in the latter report 78-20 because the NRC believed that it over-extended the bonds of 10 C.F.R. 50 and not because the NRC had originally believed the administration building to be safety related. The NRC had always believed the administration building to be non-safety related.
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- 2358 Lunch Break.
- 2359 Continuation of cross-examination of Gallagher by Stamiris.
Attachment 3 to NRC Staff testimony on Contention 3. Report 80-32 was the result of an inspection which followed up Consumer's response to the 50.54(f)(question 23). The inspection reviewed those corrective actions that Consumers had specifically identified in their response to question 23.
- 2362 Appendix A in the notice of violation. One of the violations refers to a failure to initiate preventive action to reclude repetition of a failure to identify design documents for the re-review packages. This violation is different from the violation for inconsistencies between design documents and the FSAR with respect to the soils settlement question. The deviation cited in Appendix A was a procedural deviation, the items were not being properly listed on a particular form. The NRC was well satisfied with Consumers effort in re-reviewing the FSAR.
- 2363 The fact that of 57 actions items, as listed in question 23 found on page 4 (I believe of report 80-32), 34 were satisfactory and 23 remained open does not reflect on whether or not Consumers performance was commendable or not.
- 2364 Consumers knew they would be evaluated on the commitments contained in Consumers response to question 23.
- 2365 The trend analysis program could not be expected to have identified the problems of non-identified design documents.
- 2366 Reference is to Appendix A of Report 81-01 violation 1. This is a problem that a routine audit of soils testing activity should have identified not a problem that the trend analysis should have picked up. Item 1 of 81-01 identifies the fact that complete and accurate procedures for soils testing had been developed as of January 1, 1981. Gallagher was quite surprised to find this to be the case.
- 2367 Violation 2 that test forms had not been controlled is a new violation.
- 2370 A. Cross-examination resumed by Mr. Zamarin.
Cross-examination about the text written by Tschebotarioff which concluded that foundation work inspection requires special attention and special needs. Gallagher admits that Region III during the period '75-77 did not have a civil engineer on its Staff to give proper attention to foundation work.
- 2372 The task force assembled to investigate the soils settlement problems had not been well defined in October of presumably '78.
- 2373 Gallagher was aware that Dr. Peck had been retained as a consultant by October of 1978.
- 2374 In the February 23, 1979 report, Board Exhibit 1C, page 11, states Gallagher's view that management both the corporate project engineer and manager, were not properly informed of the administration building settlement. That was the understanding of the NRC at that time of the report. Gallagher did not

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- investigation the breakdown in quality assurance beyond the area of soils activities but it is the consensus of the NRC office that the breakdown had not gone beyond that area.
- 2375 The quality assurance settlement monitoring program was not the program which first identified the settlement of the diesel generator building. It was a group of contractors who were unable to close a traverse in surveying which discovered the problem.
- 2376 Gallagher says a separate group of people performing the monitoring of the settlement of structures on the site discovered the settlement. Gallagher can not characterize whether that group is a "Q/A" activity or not.
- 2377 Dames and Moore report. Discussion about the various implementations of attaching a consultants report to the PSAR.
- 2380 Zamarin promises to provide the actual language incorporating the Dames-Moore report into Consumers PSAR.
- 2381 Gallagher argues that the Dames and Moore report's standards of performance were incorporated into the PSAR and so understood by the Staff.
- 2387 Gallagher reiterates the fact that even if a consultants report was submitted to the Staff as part of the document pursuant to a Staff request that the Applicant has to burden to identify those specific items that are to be incorporated or not incorporated into the PSAR and if they do not so designate, it is reasonable for the Staff to presume that a consultants report adds to the PSAR commitments.
- 2388 Beginning of discussion of when the NRC learned of Consumers intention to pre-load the diesel generator building and the nature of Consumers obligation to obtain Staff concurrence for this project before they went ahead. Gallagher's difficulty with Consumers not obtaining prior approval goes to the issue of cooperation with the regulatory agency in resolving certain problems and not with the technical basis for the pre-load project.
- 2392 The NRC did not tell Consumers to stop the project.
- 2393 At the December 4th meeting during which the pre-load was discussed, the Staff still had a number of unanswered questions as to what the results would mean of this project, what the acceptance criteria would be. At that meeting Gallagher had recommended that the fuel material in that portion of the structure be completely removed and replaced. He believed it would be a licensing problem if that option were not pursued and he is now certain that it is become a licensing problem.
- 2394 Gallagher does not believe that Consumers election to accept the recommendation and Dr. Peck demonstrates bad managerial attitude.
- 2395 Although 78-20 does not use the phrase "breakdown in quality assurance program", there clearly was such a breakdown in the program.

- 2396 Gallagher testimony with regard to Contention 3, page 4, Gallagher indicates that the settlement of the administration buildings grade beam should have served as a quality indicator.
- 2399 Quality assurance deficiencies were an intricate part of the December 6, 1979 order and served as specific examples of the deficiencies identified in the order.
- 2400 Zamarin continues questioning which attempts to obtain Gallagher's agreement "that the decision to issue the December 6th order was based primarily on a refocus of the technical aspect of the problem". Gallagher says from his point of view it was the primary reason. Zamarin responds with Keppler's statement that it was.
- 2401 Gallagher does not consider it an indication of bad management attitude simply to make mistakes or to have a judgment about an interpretation of something which later proves to be wrong.
- 2401 When the NRC brings to the attention of management and express concern that people may not be qualified in the management then does not take necessary corrective action to preclude this problem from reoccurring, Gallagher believes that it would exhibit poor judgment in doing so and the failure would reflect poorly on managements attitude.
- 2403 Gallagher is unsure if there was any communication regarding management attitude prior to December 6, 1979 between NRC and Consumers.
- 2405 Discussion concerning the failure to report the settlement of the administration building.
- 2408 Gallagher believes that if Consumers consultants had been informed about the failure of the grade beam as an item relevant to the settlement of the diesel generator building, then the NRC should also have been informed.
- 2406 A Mr. Tuberson had informed Gallagher of this failure.
- 2410 During the break Gallagher refreshed his recollection with a document which he thought had provided him information about Consumers informing consultants about the failure of the grade beam in the administration building. Gallagher concluded based on this review that the document did not make that determination and he so informed the board.
- 2413 Gallagher says that he disagrees with the statement that "It is inevitable that there are going to be some inconsistencies between the FSAR and design documents." Zamarin attempts to impeach him with his deposition.
- 2418 Gallagher distinguishes the two statements.
- 2420 The number of non-compliances is not of much significant value in evaluating the performance of licensees.
- 2420 Beginning of questioning by the Board - by Judge Decker. In Gallagher's opinion managerial deficiencies have been corrected since the order. Management is well aware of their problems and has corrected them to a sufficient level for the NRC satisfaction.
- 2421 Report 78-12, attachment 2 to Stamiris Exhibit 3 questioning of Judge Bechhoefer.

- 2424 The surcharges of diesel generator building could very well affect the piping of the plant and induce stresses in the piping. References made to page 5 of report 79-06 item 4 entitled "Profiles of Underground Piping".
- 2424 Another difficulty with beginning the surcharge program was the failure to install strange gage measurement devices. These devices would have measured the effects of the surcharge on the structure.
- 2425 Gallagher also believed it would be a good idea to install measuring devices on cracks found in the surface water intake structure. Gallagher guesses that these failures reflect on management commitment, but he thinks that management today is better equipped and more likely to correct these problems.
- 2426 Report 79-10, page 4, item 2 indicates that the Staff believe there were some deficiencies in both the training and the qualification at certain quality control inspectors.
- 2427 The inspectors for the containment pre-stressing system were not adequately qualified. As noted in attachment 12 of Stamiris Exhibit 3.
- 2427 Bechhoefer questions about Staff Exhibit 1 the most recent inspection report which indicates that the company still lacks adequate inspection personnel for soils remedial work. *coil*
Gallagher responds that the company has acknowledged the deficiency and is attempting to get the type of people necessary to provide the assurances that the future remedial work will be done correctly. The NRC will follow-up on this issue.
- 2428 Bechhoefer asks about previous commitments Applicant had made concerning inspection personnel and Gallagher concludes that they had failed to get sufficiently qualified people on site as they had committed themselves to do in May of either 79 or 80 and as of September of that same year had not yet gotten qualified people. Bechhoefer asks how the commitment the Staff received in response in their finding of Exhibit 1 is any different. Can we expect Consumers to comply with the commitment? Gallagher responds that the NRC expects the commitment to be followed and is prepared to do whatever is necessary to make sure that the right kinds of people are on site. He indicates on 2429 his hope that Consumers will present to the NRC the entire of coverage, the numbers of people, the capabilities of people for each remedy and that the NRC will have an opportunity to review and be satisfied with this information. Consumers did not *en* on the side of conservatism with respect to reporting settlement of the administration building. Consumers has been conservative in reporting 50.55(e)'s in the past and perhaps the company has become more conservative in terms of its reporting during Mr. Cook's tenure. 2430.
- 2430 The first item in the notice of violation appended to report 79-10 addresses the concern that Consumers could be using safety related material and workmanship which is not incompass

within the parameters of the quality organization. This first item refers to the possibility of substituting concrete material for soils materials with respect to the soils placement specification. Concrete material could be made with non-queue workmanship and material. Gallagher was unaware of any other circumstances in the Midland project where this concern could be applicable. Consumers quality assurance program is learning how to do things the right way and prevent this type of episode from taking place. Gallagher is ambiguous about whether it has reached an acceptable level of performance, however.

- 2432 In accessing the sufficiency of Q/C personnel it is more important to look at how experienced and capable the individuals are than how many there are. While Consumers may have suitable numbers of personnel in this area it is Gallagher's opinion that the industry standards with respect to the qualifications and the experience of the inspection and testing personnel are sufficiently lax because they permit too much latitude for waving educational and experienced requirements for these personnel if they can demonstrate suitable proficiency. Gallagher thinks good judgment is not always exercised in knowing what suitable proficiency means for the purpose of this waver. Mr. Marguglio had testified last week that Consumers is the head of industry standards in qualifying people to various specific areas. Gallagher believes that the procedure Marguglio is bragging about is inadequate. In effect Consumers is training people in a very particular area when people should be more broadly trained. A company should have people who are diversified in both experience and education related to the function that they are doing.
- 2433 Gallagher admits that he has been unsuccessful in getting the standard committees and the people who develop regulatory guides to require a higher degree of experience and education for the job. Gallagher believes that even if a standard like that is not in effect for a higher degree of experience and education for Q/A personnel, there would be a justification for imposing such a standard in a situation where particular facts may have occurred in the past which warranted such a higher standard. The transcript implies that Bechhoefer is considered the imposition of a higher standard on Consumers for the training of these personnel as one outcome of this proceeding.
- 2434 Gallagher believes there is a place in any standard for waving very specific standards for educational experience. However, an organization should certify personnel through the waver route as an exception not as a routine matter. With Midland and a number of other facilities the waver procedure is the standard norm, unfortunately. The standard should require a person working in a particular area to have a diversified experience. For example in the area of concrete inspection an inspector should have sufficient experience regarding the testing of all of the materials which provide strength of the

structure. These individuals will then be able to detect broader problems than the very specific area they may be inspecting. This is desirable for both inspection quality as well as for minimizing the organizations long-run costs of inspections. These requirements for broad experience among inspectors would vary based on the responsibility of the position.

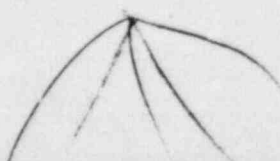
2436 In response to Judge Decker's concern that it is difficult to find and hire qualified people, as Consumers had testified, Gallagher response that on a project like Midland with its long history of problems Consumers has to find such people despite their scarcity. Gallagher is of the opinion that adequate corrective action has now been taken to identify and rectify the route causes of problems.

2438 Gallagher is less confident that Consumers by identifying non-conformances is able to understand the implication of that non-conformance on other parts of the reactor. Its correction of non-conformances emphasizes the correction of the specific problem only. Decker gives his opinion that one would have to be very well qualified to anticipate possible implications of a problem for the rest of the system and concludes that he is really venturing into areas beyond current regulatory requirements by asking about a systemic analysis.

2439 Gallagher believes that U.S. testing is now up to speed and capable of performing work which must be done to insure remedial action work is successful.

2439 Decker is concerned whether any management actions need to be taken to strengthen future construction or Q/A affects in the soil area. Gallagher responses that a part of the past problems has been the lack of accountability by higher management for the plants performance. Gallagher believes the chief executive official, Mr. Selby, should himself report to the NRC on a routine periodic basis with regard to the remedial soils action and identify what goals had been established during the period reporting period and what goals were achieved and not achieved, what deficiencies have been identified and why they occurred. By having Selby directly involved in this sort of future remedial work all the people who are going execute these complex tasks will understand the significance and importance to the company and will be more motivated to perform properly. Gallagher implies that having Mr. Cook, the Vice President in charge, is not sufficient involvement by higher level management.

2440 Decker's question: Are you in full agreement with the ~~reasonable~~ assurance findings contained in Keppler's post-Dec. 79 testimony? Gallagher responds that he has difficulties with the phrase "reasonable assurance". He believes that there are in effect necessary tools and systems to provide some acceptable level of confidence that the task can be accomplished, however, in view of the difficulty the company had simply taking soil from one point on the site and placing



- in a sufficient manner to support the structures on another portion of the site, he has some reservations as to whether or not the company can successfully accomplish the unprecedent remedial actions at this nuclear site.
- 2442 Bechhoefer question if your recommendations concerning Selby and your recommendations on the qualifications of Q/C inspectors were put into effect would you have less reservations about Consumers ability in this regard? Gallagher responds that the complexity of the remedy itself is difficult to come to grips with. He believes that it would be helpful for the NRC to provide a full-time geotechnical representative to observe, inspect, and take independent measurement throughout the remedial fixes with regard to the dewatering system installation, the monitoring of structures, the preloading of the borated water storage tank, valve pits, underpending the auxiliary building and field water valve pits, and piping systems imbedded in the fill. If all of these things were done Gallagher would have some better assurance that the task can be successful.
- 2443 Gallagher is not concerned that serious deficiencies would exist which would go undetected. He is concerned that the company not be allowed to make any more mistakes even though he believes these mistakes will be detectable.
- 2444 ~~We direct by Pa. 17.~~ Gallagher indicates he has not had an opportunity to discuss his suggestions with management of the NRC. He believes that one \$30,000 a year geotechnical engineer on site during 1975, 1976 and 1977 would have prevented each and everyone of the problems with the soils settlement that occurred.
- 2445 Gallagher indicates that he had a copy of the stipulation when he made his inspection in May of 1981. The purpose of having the stipulation was to verify and ascertain whether or not the facts contained were true and accurate and could be relied upon. The Applicant wanted the inspectors to have this stipulation with them for that purpose. The stipulation did not affect Gallagher's conclusions with respect to the inspection. Bechhoefer implies that he wanted to know who told Gallagher that the Applicant wanted him to have the stipulation with him because "to see if it confirm some other information we had gotten."
- 2446 ~~Re-cross by Stamiris.~~ Questioning about page 9 of report 81-01. Gallagher does not recall having seen the audit reports which were written up by Consumers in August of 1980. Stamiris is attempting to show that Consumers had other problems with soil settlement before the diesel generator building that were not brought to the attention of the NRC. She's unable to elicit any definitive statement in this regard.
- 2448 Gallagher does not feel compelled to defend problems that Consumer has in quality assurance and doesn't think he has been defending them.

- 2451 Gallagher believes Consumers properly reported the cracks involving the borated water storage tank. It was just coincidental that he happened to be on the site the day they reported it for the first time to the NRC. His presence did not prompt such reporting.
- 2454 Stamiris attempts to ask whether Gallagher believes that he has reasonable assurance with respect to Consumer's performance only if the NRC has a full-time geotechnical inspector on duty. Gallagher believes that there is a managerial attitude consistent with what should be involved in quality assurance. His suggestions were for the purpose of indicating what things might provide better confidence at reasonable assurance can be accomplished. He believes that it is the Board's judgment to make that decision.
- 2455 Re-cross by Zamarin. Questioning about Report 79-06, page 5, attachment A to Stamiris Exhibit 3. Gallagher was aware that Consumers had committed itself to profiling the underground pipes both before and after the diesel generator building pre-load.
- 2458 The fact that Consumers profiled the underground pipes both before and after the pre-load and the fact that the gage measurements on the pre-loaded structure were being taken indicates to Gallagher that Consumers exercised four-sided with regard to the data to be collected concerning this task.
- 2459 Zamarin attempts to establish that the ANSI Working Committees on standards are composed of experts and therefore, the standards they developed should be given great weight as the state-of-the-art. Gallagher indicates that the standards committees are not necessarily made up of experts and that the NRC has attempted unsuccessfully to do something about the waver provision of ANSI N 45.2.6.
- 2460 Gallagher is referring specifically to the post-tensioning personnel issue where there was a difference of opinion between Consumers and the NRC about whether the waver provision had been applied properly.
- 2461 Gallagher indicates that Consumers decision to use concrete which was not queue listed in lieu of soils was an incorrect and poor decision and was more than just an honest difference of opinion between the NRC and the design engineer. Gallagher admits his decision was based more on regulatory considerations than on design considerations when he concluded that the concrete should be queue listed. Consumers just had too many problems in the soils area in the past to allow any substitute for soils to escape the reach of NRC inspections.
- 2463 Although soils problems has occurred at other nuclear sites, the degree to which it has occurred at Midland is unprecedented.
- 2465 Zamarin attempts to establish that all people make mistakes, including Gallagher, and that therefore, Consumers should not be held to a higher standard when they also make mistakes. Zamarin specifically focuses on the inclusion by Gallagher of

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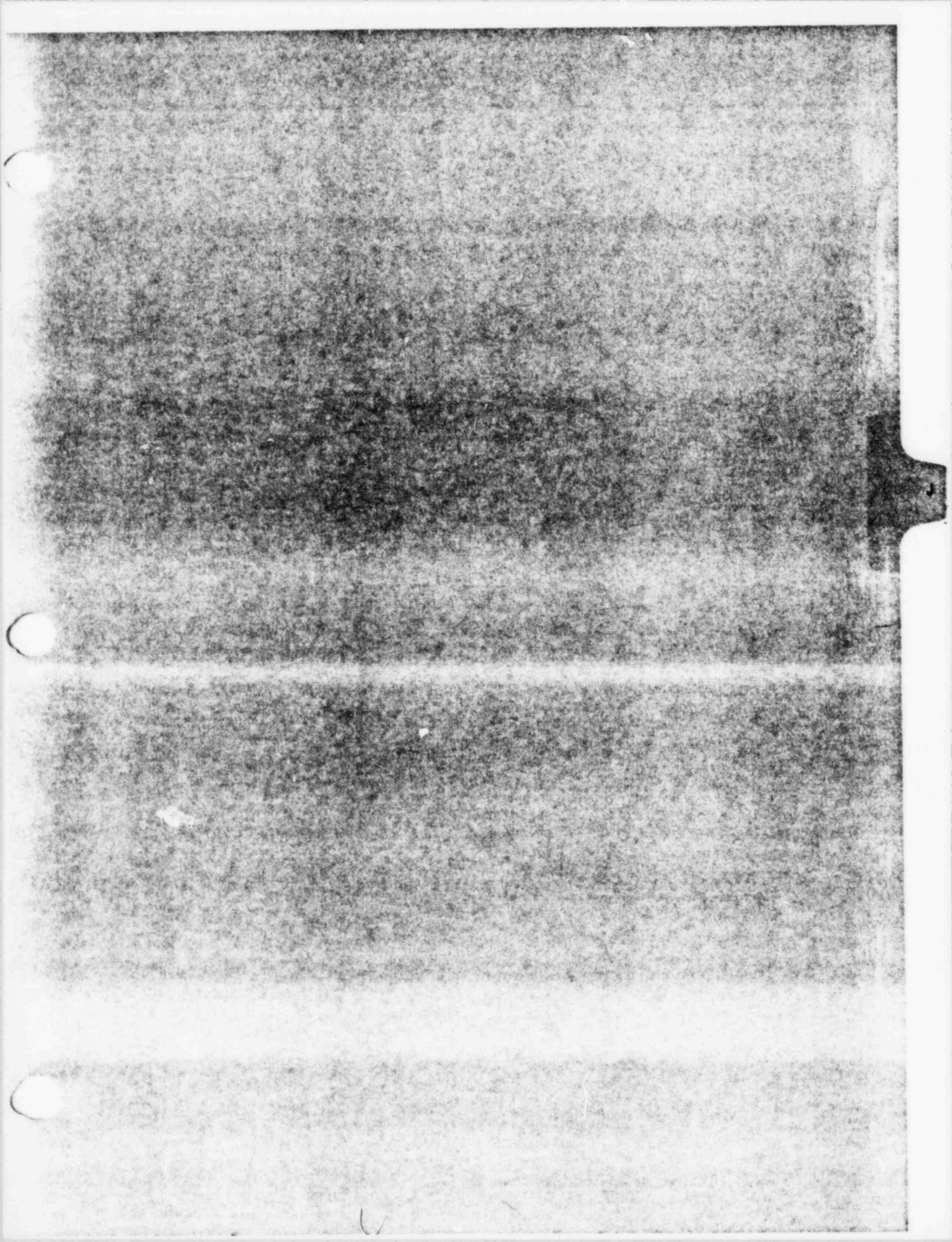
an item of non-compliance in his report 78-12 which he later withdrew as inaccurate. Gallagher responds that Zamarin is comparing apples and oranges and the failure to identify an item of non-compliance with a withdrawal of an item of non-compliance is not the same thing as "27 million plus fiasco". "You're talking about a plant that's 70% complete, that is crippled. You're not talking about an insignificant error in an inspection report."

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Zamarin attempts to establish that Gallagher did not have a reasonable basis for his conclusion that the CEO of Consumers should be directly involved in the Midland Plant construction. Zamarin attempts to establish that Gallagher does not know how large companies are run and has no expertise to make such a suggestion.

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Both Cowan and Bechhoefer appear mildly supportive of Gallagher. Gallagher responds that he did consider the importance of the project to this company and understands the position of the CEO. Based on these two considerations the CEO should have some direct involvement in turning this project around



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- 2485 Resumption of cross-examination of James Cook. 50.55e reports go out under Cook's signature.
- 2486 Stamiris Exhibit #5 is marked for identification. It consists of the transmittal letter for Amendment #3 to the PSAR and a portion of the Dames and Moore Report.
- 2490-98 Discussion of the propriety of asking Mr. Cook about any apparent inconsistencies between the Dames and Moore report and page 5 of Attachment 5 to Stamiris Exhibit #3. Chairman rules that Cook is not the proper witness to ask this question of and suggests that Mr. Howell may be the appropriate person to pose this question to.
- 2499 The Staff informs the Board that the inconsistency that Stamiris believed existed in the documents was not in fact an inconsistency but rather the result of a misunderstanding that there were actually two different dewatering systems described in the document.
- 2500 The Staff has no cross-examination of Cook.
- 2501 Board examination of Cook commences. The Staff wanted additional borings so as to give it more confidence in the status of the soils and so it could determine whether the surcharge program was indeed adequate.
- 2502 These additional borings have been taken in most areas of the fill. Not just in the nearby vicinity of the diesel generator building.

- 2503 Cook's opinion that the borings may be inconclusive or even confusing is based on the advice of the consultants. The problem with the borings is that there will not be a large enough sample to get a statistically significant picture of what, if anything, the surcharge accomplished.
- 2504 Cook believes the best information available is the direct measurement of the diesel generator building in place, not borings information.
- 2505 Cook does not agree with Region III's position that Consumers in the past did not have adequate control over the Bechtel QA operation. The new organization represents a more efficient utilization of resources. It also puts Consumers personnel directly in charge of the day-to-day operations of the QA program with the exception of testing.
- 2506 As a result of the reorganization, there is better interface between Bechtel and Consumers than there was previously.
- 2507 Cook believes that the employees are aware of the fact that quality assurance is a top priority item and that it is essential to the success of the project. He adds that Consumers has retained Phillip Crosby & Associates, and that Consumers is hoping to learn from him techniques that will help improve Consumers ability to communicate the importance of quality to all the people on this job.
- 2508 Page 4 of Cook's testimony lists 5 management attitude criteria. Cook does not think that these 5 criteria represent changes in management attitude from the earlier period. Cook

does not believe that prior to assuming his present position, Consumers did not promptly, effectively and completely communicate with the NRC on matters affecting the construction permit and operating license.

2509 Cook spends on an average a day and a half on-site per week.

2510 Cook will be extensively involved in overseeing the remedial work. He will read all the reports that are written on remedial work and he will question the line managers and others who are involved in implementing the remedies. He will also be a direct participant in the final resolution of the remedial actions with the NRC Staff.

2511 The chief executive officer of Consumers is now directly involved in the Midland project; that is, he is aware of every major decision that is being made on that project. Cook believes that he is probably as involved as any chief executive officer of a nuclear power company. It is not the normal practice for the chief executive officer to make routine reports to the NRC concerning the remedial work.

2512 Cook does not believe that requiring the chief executive officer to file reports with the NRC would increase his visibility on the project. Cook believes that the CEO's visibility is already considerable. He believes that the workmen on the site recognize him as he tours the plant and are fully aware of his interest and concern, not only in the soils work but in the entire execution of the job. Cook believes that the CEO's willingness to converse with the workers and his

participation in design meetings, etc. has more of an impact on the worker than the fact that he might transmit certain routine reports to the NRC.

2514 Consumers met with Phillip Crosby on the 18th and 19th of June, 1981. Consumers is currently exploring what type of arrangement to have with Phillip Crosby, however, they are attempting to implement some of Mr. Crosby's suggestions with respect to quality assurance.

2515 Cook does not recall ever denying a request for additional personnel made by Mr. Margulio or Mr. Byrd. He does not expect that in the future, he will deny any requests for added personnel.

2515 Redirect.

2516 There are monthly project meetings attended by the entire project management level personnel during which quality assurance activities are always discussed.

2517 Cook describes the four basic tenets of Crosby's QA philosophy.

2518 The Chief Executive Officer attended this session with Mr. Crosby in June. John Gilray of the NRC first recommended Mr. Crosby.

2519 Cook briefly describes Mr. Selby's background in nuclear engineering. Cook states that when Mr. Selby's participates in discussions with the NRC, his participation is very informed. He is not just a figurehead.

2520 Cook is excused.

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2521 Eugene Gallagher is recalled.

2522-23 Gallagher states that if the Staff were to receive a copy of Board Exhibit #2 which was the Dames and Moore report that was amending the PSAR, the NRC Staff reviewed would expect that the details in the report would be followed during the construction work activity would exception noted.

2523 The Board marks the first three pages of Stamiris Exhibit #5 as Board Exhibit #2 and receives it in evidence.

2525-26 Gallagher specifies what portions of the response to Contention #1 he is sponsoring.

2527 Gallagher's testimony with respect to Contention #1 is admitted into evidence.

2528 Gallagher identifies what portions of Contention 2 he is responsible for.

2530 The Board accepts into evidence Mr. Gallagher's response to Contention #2.

2531 Cross-examination of Gallagher by Stamiris begins.

2532 Stamiris Exhibit #6 is marked for identification. It is meeting notes of a meeting on September 28, 1978. The subject of the meeting was settlement observations some fill supported structures.

2533 No NRC personnel were present at this meeting of September 28, 1978. It appears that it was an internal meeting between Consumers, Bechtel and the consultant, Dr. Peck. Stamiris

Exhibit 6, page 2, para. B states, the southwest corner of the turbine building has settlement 3/4 of an inch since May of 1977. It may have been influenced by the adjacent excavation for the administration building. Gallagher is aware of excavations that were made in order to construct the footings for the administration building.

2535 After the settlement of the grade beams was detected, there was an excavation to remove that material that had not been fully compacted.

2536 Although Gallagher cannot draw a firm conclusion with respect to which excavation the meeting notes refers to, since the meeting generally involved settlement problems and that the more important excavation dealing with the administration building involved the removal of the inadequately compacted material, I might draw the inference that the excavation involved the settlement of the grade beams.

2537 Gallagher repeats that he cannot state this conclusively since he was not present at the meeting. The chairman suggests to Barbara that she may want to ask this question of Dr. Peck.

2538 Stamiris exhibit 6 is received in evidence.

2542 Gallagher states that he is not aware of any instances where time and financial pressures affected the soils settlement actions taken by Consumers.

2544 The specification prohibited the use of any organic material such as tree stumps or vegetations in the plant fill. During the course of Region III's investigation, it did not identify

any cases where foreign matter or organic materials were used in the fill.

- 2545 Cross-examination by Zamarin begins.
- 2546 Zamarin points out that the purpose of the meeting documented in Stamiris exhibit 6 was to discuss settlements of structures south of the turbine building. Gallagher states that the administration building is not south of the turbine building.
- 2550 During the meeting of December 4, 1978, there is a lot of discussion about whether the list of compaction equipment existed. The Bechtel project manager believed it did exist, however, it was not produced at the meeting. Gallagher subsequently learned that such a list did not exist. The list that was originally requested by the resident inspector is a different document from that which is referred in the concluding para. on page 9 of Gallagher's testimony on Contention 1.
- 2551 Gallagher presumes that the resident inspector's request was with respect to the qualification of equipment for ongoing work at the site and not a request with respect to the equipment used for the diesel generator building compaction.
- 2551 Gallagher believes it was understood that the same equipment that was used to compact the fill beneath the diesel generator building was still going to be used for compacting other material at the site.
- 2553 Gallagher states that the Staff was interested in finding out whether the original equipment was capable of achieving the

desired results and it was also interested in determining what the qualifications of the equipment that would be used for future work was.

- 2554 Once the Staff was informed of the administration building settlement problem, the report of that problem dated December 1977 was provided to the Staff. The timing of Consumers notification to the NRC of the grade beam failure was never an issue raised in an inspection report.
- 2556 Gallagher states there was no adverse health and safety implication as a result of the delay in apprising the NRC of the grade beam failure.
- 2561 Gallagher states that Bechtel's investigation into the grade beam failure did extend beyond the local area to the extent that they took additional borings outside the area of the administration building.
- 2562 The investigation did question the adequacy of the entire plant fill area.
- 2562-3 Zamarin points out that a statement on page 23 of report 78-12 that the question as to the adequacy of the entire plant fill area did not arise in the course of the Bechtel investigation is not correct. Gallagher admits that that sentence is not as accurate as it could be.
- 2563 Gallagher does not believe that financial and time schedule pressures had anything to do with the substitution of lean concrete in the area of the duct banks of the diesel generator building. This response relates to Contention 2c.

- 2566 Gallagher states that the duct bank rises vertically beneath the building and then curves into one of the walls of the buildings. And that because it would have been difficult to compact in place soil materials in that tight area the field people requested that they use concrete material for ease of construction sake.
- 2567 Gallagher reiterates that the substitution of lean concrete for backfill had nothing to do with financial time schedule pressures.
- 2568 Examination of Gallagher by the Board begins.
- 2569 Gallagher states that taking two borings outside the area of the administration building he does not think is sufficient to reach a definitive conclusion that the settlement of the grade beam was localized. The two borings take in outside of the administration building area were in two different areas quite a distance apart from each other. Gallagher states that there would be very little statistical basis for believing that one boring would detect incompetent fill material.
- 2570 Gallagher believes that not enough of an investigation was performed to determine whether or not the administration building settlement was indeed localized.
- 2572 Gallagher repeats that he doesn't believe expediency had anything to do with the substitution of lean concrete in the electrical duct banks. It was a matter of not thoroughly checking design details which Gallagher believes has nothing to do with expediency. These responses relate to contention 2c.

2573-74 Gallagher quotes from a letter Bechtel sent to U.S. Testing dated February 1, 1978. That letter states that U.S. Testing Company is liable for the repeated erroneous selection of compaction standards. Gallagher states that if Bechtel had determined that the testing company was repeatedly erroneously selecting the incorrect laboratory standard that it used to compare the in-place fill density too then one would assume they hadn't been making that correct selection throughout the site since they were using the same testing company, the same methods and the same personnel. Gallagher states that this mere fact that the laboratory standard was not being properly followed presents overwhelming evidence that there was a problem site wide.

2574 Gallagher suggests that perhaps a more appropriate investigation would have involved more extensive borings and the digging of a test pit. Gallagher was not able to determine whether Bechtel in fact took specific corrective actions with respect to U.S. Testing but he does know that the same problem did occur subsequent to February 1, 1978, and continued to occur up until the detection of the diesel generator building failure.

2575 Since the detection of the diesel generator building failure, certain safeguards have been instituted to prevent repeat of the problems with U.S. Testing and the NRC Staff is satisfied with these safeguards.

- 2576 Gallagher describes what one must do to develop a list qualifying compaction equipment. Gallagher estimates that it would take a couple of weeks to develop a list of equipment qualifications.
- 2577 The first request from the resident inspector which was in 1978 involved the original list of qualified equipment. Once it was learned that that list did not exist, the Staff then requested Consumers to qualify the equipment that they had planned on using for the subsequent work. That request was made some time around March of 1979. The final report on the qualification of compaction equipment was not received until August of 1980.
- 2578 Gallagher concluded that the series of requests with respect to the compaction equipment represents poor cooperation with the NRC and reflects adversely on the responsible officials. Those responsible officials are both the project management and the quality organization officials, both of which in Gallagher's opinion have the responsibility to provide the necessary documentation to NRC inspectors so they might perform their functions appropriately. Gallagher does not recall any other instances of poor cooperation.
- 2578 The qualification of compaction equipment was not an FSAR commitment.
- 2579 The qualification of compaction equipment is a fairly well established industry practice when one is dealing with major earth work project. In fact the reactor building is founded on the glacial till which is a very hard dense material.

2581 Gallagher describes that the problem with the compaction
specification was that the method that was specified was not
capable of achieving the desired end result given the
particular piece of equipment that had been selected. The
construction specification permitted twelve-inch lift
thicknesses for the cohesive clay material. A lot of
geotechnical engineers would have questioned that number from
the start. Twelve inches for clay material is quite high and
more routinely clay materials are six to eight inches at best.

2582 The Midland FSAR did not include the qualification test report.

2583 Gallagher states that the construction specification Consumers
had for earth work was a mess. It had conflicting statements
within the construction specification which were at least
confusing to the field engineer and the quality control
inspector. The same specification was attempted to be used on
the cooling pond dikes as well as the plant fill even though
they were completely different types of structures that might
necessitate different provisions. In short the specifications
were very poor and in Gallagher's opinion have been a major
contributor to all of the subsequent problems.

2584 Re-direct of Gallagher. The August 15, 1980 response referred
to on page 9 of Gallagher's testimony on Contention 2 did not
actually demonstrate that the original equipment used for the
diesel generator building was qualified. Gallagher attends
meetings all the time where matters were discussed which were

not expressly within the stated scope or purpose of that meeting.

2586 Gallagher states that cost and schedule considerations are always a part of any project and properly so. However, he does not believe these considerations have been the cause of the problems associated with soil settlement at Midland.

2587 Stamiris states that she doesn't think she could prove expediency with respect to any of her examples set forth in Contention 2.

2588 Gallagher states that he thinks he would be able to detect if there was evidence of cutting corners on construction projects, but this determination would not be a matter of qualified judgment but rather a matter of looking at records.

2589 Re-cross by Miller.

2589 Gallagher states that the NRC has not reviewed the detailed specifications for the remedial work yet, yet they expect to. Gallagher hopes that Consumers development of those specifications will be complete and thorough.

2590 Gallagher has reviewed the specifications for the current soils work and he believes they are well developed and satisfactory. Gallagher states that the present earth moving specifications and his expectation about future earth moving specifications are consistent with implementation of quality assurance regulations.

2591 Gallagher admits that the first place you would look for additionally poorly compacted fill material in the area of the

administration building would be adjacent to where the grade beam had settled.

- 2592 Gallagher states that he believes this was done. Doesn't remember the exact results of that investigation, but in general terms the results were satisfactory; that is, they did not indicate poorly compacted material. The two other grade beams at the administration building were load tested and they behaved satisfactorily. Thus, it was not simply the two additional borings that led Consumers to conclude that the problem was a localized one. Gallagher adds that also available to the Company was the information concerning the inadequate testing of the fill.
- 2593 Consumers, in response to question 23 identified deficiencies in test procedures as the cause of the soil settlement problem. Gallagher states that this quality assurance deficiency involving improper testing is comprised within the scope of paragraph 1 of the stipulation.
- 2594 Pages 23-29 of the response to question 23 lists the procedural safeguards and changes that have been made with respect to subcontractor test procedures. To Gallagher's knowledge, they have been implemented properly and Gallagher has confidence that these test procedures will be appropriate and proper in the future.
- 2595 Gallagher has no reason to believe that the information on the administration building settlement problem was withheld deliberately from the NRC. Miller gets Gallagher to admit that

it was a fairly busy time when the soil settlement issue came to a head and he asks, isn't it possible that someone just forgot to tell the NRC about the administration building problem. Gallagher responded that more than someone had forgotten - a lot of people forgot.

- 2597 Gallagher does not have any document which indicates he requested the compaction equipment list during an I&E visit in mid-1979.
- 2598 Gallagher states that he made this request referred to on page 9 of his testimony on Contention 1 to Mr. Horne, the civil quality assurance supervisor. Gallagher states that the telecon found in Attachment 12 to Contention 1 is an accurate summarization of the conversation. By May 12, 1980 Gallagher was a bit impatient with Mr. Horne.
- 2599 Gallagher states that Horne was trying his hardest to get the equipment list. During this conversation, Gallagher didn't tell Horne that he had been waiting for over a year because Horne knew that Gallagher had had continuous contact with him for that past year.
- 2601 Miller directs Gallagher's attention to page 3 of Attachment 9 to Contention 1, where it states - The Staff noted that such documents as above are needed by its consultants for their independent assessment of the adequacy of the proposed remedial measures. Gallagher states that he is certain that the consultants needed the documents. More importantly, however, the NRC inspector needed it in order to perform his function.

- 2603 Documents listed on page 2 of Attachment 9 to Contention 1 were turned over to the Staff.
- 2604 In July of 1979, Consumers made a commitment not to do soils work without equipment that was properly qualified. That commitment was kept. Gallagher was later able to verify the commitment after he had received the qualification test report in August of 1980. Gallagher never requested anybody higher than Mr. Horne to expedite the delivery of the compaction equipment report. Mr. Horne reports to Mr. Byrd who reports to Mr. Cook.
- 2605 Gallagher's request for this document was made to the first line supervision on site. Gallagher did not make this request to anybody else. Mr. Horne was Gallagher's principle contact on site and he expected that when he expressed a concern with not being able to obtain a document, that Horne would take it upon himself to go to his management and get the necessary action so that the NRC would be satisfied.
- 2606 Gallagher is aware that Mr. Horne contacted Mr. Byrd about this matter. Gallagher does not know whether Mr. Keely was every involved in getting the report. The oral communication record which is found as an attachment to Contention 1 indicates that Gallagher contacted Mr. Byrd in May of 1980.
- 2607 Mr. Horne and Mr. Byrd are in the quality assurance management. Gallagher admits that he had no direct contact with anybody in the project management office with respect to this document request. Mr. Byrd is in the consumers management chain and

Gallagher expected that he would contact the project manager or the vice president or whoever is necessary to get the documents requested by the NRC. Gallagher states that it is his practice to request documents from the first level, since that is the level he expects to interface with. He does not believe he should have to go to the vice president of a company in connection with the request for a simple report.

2608 Gallagher states that he called Byrd, not vice versa.

2609 When Gallagher stated that the soil specifications were a mess, he was referring to C-210 page 2608 - Gallagher believes that specification C-210 which was entitled "Earth Work and Excavation for Cooling Pond Dikes and Plant Area" was in fact used for the plant area in the immediate power block in addition to specification C-211.

2613 Gallagher is excused.

Hood re #1

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- 2615-17 Hood identifies which portions of the Staff testimony on Contention 1 he is sponsoring.
- 2618 Miller objects to the portion of Hood's testimony that begins on page 4 and continues over to the bottom of page 5 which explains why the false statement was material.
- 2619 The Board overrules Miller's objection. Hood's testimony on Contention 1 is admitted into evidence.
- 2620 Cross-examination by Stamiris begins. Hood does not recall Stamiris ever expressing the view that the material false statement was intentional.
- 2621 Hood admits that Stamiris's notes of the November 24 SALP meeting which are duplicated on page 11 and 12 of Hood's testimony are accurate.
- 2622 Hood is in charge of the 50.54f communications between the Staff and the Applicant. 50.54f questions are not FSAR questions.
- 2623 Hood is also involved in FSAR questions. The correspondence with respect to the FSAR questions took a long period of time but Hood does not believe it was an extraordinarily long period of time.
- 2624 Hood states that he does not believe there was a reluctance on the part of the Applicant to come forward with the information that the Staff needed to resolve the tectonic province issue. There was not a problem in getting an answer, the problem was

that the information received was not sufficient to resolve the technical question.

2625 Since Applicant has been pursuing the site-specific response spectra approach, the issue of the appropriate tectonic province is no longer at issue. This is not to say that the Applicant no longer believes that the Michigan basin is not the appropriate separate tectonic province. It still holds that opinion.

2626 Hood states that the information requested in these tectonic province questions did not specifically relate to acceptance criteria.

2627 The Tedesco letter of October 14, 1980 set forth the Staff's two alternative approaches to resolving the seismic issue.

2629 Prior to the sending of the Tedesco letter, there had been numerous meetings with the Applicant concerning the resolution of the proper tectonic province. The Tedesco letter was an effort to try to expedite the resolution of the differences of opinion by suggesting two acceptable alternatives.

2630 Hood states that there is no connection between the resolution of the tectonic province issue and the timely resolution of the soil settlement problems. He also states that timelier resolution of the tectonic province issue would have had no bearing on the issuance of the order.

2633 Hood states that his comments at the SALP meeting were meant to convey the message that the substance of the replies that the Staff was receiving from the Applicant were such that they did

not permit the Staff to conduct an efficient review. The Staff had to re-ask and repeat earlier questions.

2634 Hood explains the Q-1 and Q-2 process. He says that typically when the Q-2's are sent out the Staff is able to state its position. However, in the earlier FSAR review, the responses to Q-1's were not complete enough to enable the Staff to have a position for the Q-2's, therefore the Q-2's ended up being very much like the Q-1's in that they were eliciting preliminary information. This is what caused an inefficient review process.

2634-5 Hood elucidates the basis for his statement that there was a tendency on the part of the Applicant to push ahead despite lack of proper assurances. Hood explains that the Staff is attuned to receiving up-front assurances and that in the case of the surcharge of the diesel generator building, there were no up-front assurances since it was a learn as you go approach.

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- 2643 Cross-examination of Darl Hood by Stamiris begins.
- 2644 The Staff has not done any cost-benefit analysis with respect to the Midland soil settlement problem.
- 2645 Attachment 16 which is June 13, 1979 memo from Mr. Thornburg to Dudley Thompson represents one step in the decision making process regarding the false statements made in the FSAR.
- 2647-
- 2648 Hood discusses the process of determining whether a statement is material and false. The false determination is made by the Regional Office of Inspection and Enforcement and the determination as to whether the statement is material is made by the Office of Nuclear Reactor Regulation. The question of whether a civil penalty will be levied is decided by the enforcement branch of the Office of Inspection and Enforcement. Mr. Thompson would be involved in that decision.
- 2651-
- 2652 Enclosure 2 to Attachment 17 represents samples of inaccuracies in the FSAR not changes from the PSAR to the FSAR.
- 2653 The remedial design changes have been approved by means of amendment 72 and others.
- 2654 FSAR amendment 72 is construed as being in response to the December 6, 1979 Order.

- 2655 Hood states that these amendments that concern the remedial actions are still being evaluated by the Staff and will be the subject of further sessions in this hearing.
- 2657 Hood states that the removal and replacement option was a more conservative one than the surcharge option.
- 2659 Hood states that regardless of the option chosen to remedy the diesel generator building settlement problem, the Staff would have wanted certain information up front about what was planned and how it was to be implemented.
- 2659 Hood states that it is the NRC's responsibility to make sure that the health and safety of the public is protected.
- 2660 Hood states that the decision to pursue the observational method has made it somewhat more difficult for the Staff's review efforts. The Staff's difficulty is that by using the observational method, the information is generated during the process rather than getting the information up front. The Staff prefers to receive up front assurances.
- 2664 Hood's closing statements as documented in Attachment 11 were made to acknowledge the fact that the Staff did not approve or concur in the surcharge program and therefore, that the Applicant was proceeding at its own risk.
- 2665 Cross-examination of Hood by Miller. Consumers has stated its intent to amend the FSAR after the NRC approves the remedial actions.
- 2666 The Staff has given its approval for this approach.

- 2667 Even though the remedial measures may not be currently reflected in the FSAR, the Staff is fully informed of the Applicant's position with respect to the remedial measures. It is not uncommon for there to be inconsistencies in the FSAR.
- 2668 The definition of materiality used on page 4 and page 6 of Hood's prepared testimony is intended to be the same as that definition given on page 1 of Attachment 17.
- 2668 The definition of materiality is a legal one and it comes from the North Anna proceeding.
- 2669 In addition to the FSAR questions and responses on tectonic provinces, there were other meetings, telephone discussions, etc. on that subject matter.
- 2670 The two Staff approaches set forth in the Tedesco letter of October 14, 1980 were not unique. One of the alternatives resulted from the Sequoia case. The other alternative was based on Reg Guide 160.
- 2673 Hood states he has some vague recollection of some generic letter reflecting the site specific response spectra approach for operating licensing cases.
- 2673 The Sequoia decision was not the subject of a ASLB proceeding, but rather it was a Staff position that was adopted in connection with an ACRS review. This position was adopted approximately one year ago.
- 2675 With respect to supplement 1 to Contention 1 Hood reiterates that there was proper cooperation with respect providing the four documents, excluding the document on compaction equipment.

- 2676 Hood states on page 12 of his testimony on Contention 1 that Consumers placed and removed the surcharge without first providing an adequate response to 50.54(f) request 4. Request 4 was tendered to Consumers in March of 1979. Consumers first began placing the surcharge in January of 1979. Thus, the placement of the surcharge preceded Staff request number 4.
- 2677 Hood admits that it is illogical to state that Consumers placed the surcharge without first providing an adequate response to request 4 when Consumers had not even received request 4 when the surcharge was first begun.
- 2678 Attachment 11 to Contention 1 consists of meeting notes for a meeting held on December 4, 1978. Dr. Peck made a presentation on the surcharge program at this meeting.
- 2678 Hood states that during the December 4th meeting no one from the Staff indicated to Consumers not to place the surcharge nor did anyone from the Staff indicate that placing the surcharge would make the Staff's a lot tougher and requested that Consumers wait until the Staff could formulate further questions on the surcharge. Indeed, this is why Hood closed the December 4 meeting by saying that the surcharge was being taken at Consumers' risk. That meant both financial risk and the risk that the Staff could not conclude that the surcharge met the regulatory requirements.
- 2679 Hood states that the surcharge approach did not give the Staff up front reasonable assurance about the outcome. The surcharge program is an observational method and a type of proof test.

- 2681 As time passes, the surcharge program generates data which will establish either the success or failure of the surcharge program.
- 2683 At the December 4, 1978 Dr. Peck did settlement in the range of 6 to 18 inches as a result of the surcharge.
- 2684 Hood states that a settlement prediction would be one type of acceptance criteria by which the Staff would judge the efficacy of the remedial measure. He adds that the rate of settlement would be another acceptance criterion. The Staff would need more than just the predicted amount of settlement, it would want to know the basis for that prediction. The Staff would want enough information that would allow it to conclude independently that the prediction was reasonable.
- 2685 The surcharge was removed at the end of August 1979.
- 2686 There was a meeting in Bethesda on July 16, 1979 between the Staff and representatives of Consumers, Bechtel and the consultants concerning remedial work. James Knight was present at this meeting. Mr. Knight has responsibility for the major disciplines that are involved in evaluating and approving the remedial actions.
- 2687 A status report on the surcharge program was given at this July meeting.
- 2688 No one from the Staff told Consumers not to remove the surcharge during the July 1979 meeting. Furthermore, no one from the Staff said - we haven't received an adequate response to question 4 and until you respond to that don't do anything

further with respect to remedial work on the diesel generator building.

- 2689 Hood does not recall Mr. Knight saying that the surcharge program was adequate. Hood remembers Mr. Knight indicating that the information that had been conveyed at the meeting was quite significant to the process and that he was anxious to have Consumers document the information that we had heard at the meeting. He felt that positive steps were being taken to remedy the problems. The Consumers documented their July presentation by a letter dated August 10.
- 2691 Consumers Power Exhibit 7 is marked for identification. It is a memorandum to file from Darl Hood dated August 24, 1979 - subject, internal meeting on status of Midland soil settlement.
- 2692-
- 2694 Hood identifies those individuals who were present at this August 24 meeting.
- 2695 The Chairman admits Consumers Power Exhibit 7.
- 2696 Hood does not recall any discussion at this August meeting regarding Consumers decision to remove the surcharge without first providing an adequate response to request 4.
- 2697 There was a meeting in November of 1979 concerning the adequacy of the remedial measures. Hood stated at that meeting that the proposed fixes are such that if they are implemented properly they should be adequate. NRR's problem is the QA on fixes. Question of how close they are to the bottom line of acceptance

criteria. The surcharge had been removed for approximately 2½ months at the time Hood made that statement.

2699 Hood does not recall specifically whether during the November 1979 meeting there was any discussion that the diesel generator building surcharge had been removed without first providing an adequate response to question 4. He does recall making some general statements concerning the Staff's dissatisfaction with the nature of the review of the remedial measures.

2700 On November 19, 1979 another set of 50.54(f) questions were sent to Consumers. On page 12 of Hood's testimony, it states - "We have set some record on the number of questions re-asked which speaks poorly for Consumers - NRR interface". Hood states that this poor interface was not solely the fault of Consumers Power Company. Hood admits that between March of 1979 and until the end of that year the Staff had problems allocating resources to the Midland case.

2701 Hood cannot conclude that because of TMI the level of effort on Midland was any less than it would have been had TMI not occurred.

2702 Hood does not agree that in October of 1979 there was insufficient review attention being given to resolution of the soil settlement matter.

2704 Miller impeaches Hood's earlier statement that there was not insufficient review attention being given Midland by pointing out a statement he made in his deposition of October 8, 1980 page 175 line 7 "Yes, at that point in time there was

insufficient review attention being given to the matter". The Corps of Engineers was brought on late in 1979. In February of 1980, there was a meeting with the Corps onsite to bring them up to speed on the soils settlement issues.

2706 By the time the Corps had become familiar with the Midland case, about 18 months had passed since the settlement was first reported to the NRC. Hood does not agree that questions had to be re-asked because the Corps had gotten involved in the case at a later point.

2707 Hood's statement on page 12 of his prepared testimony concerning the number of questions re-asked involves not only soils settlement questions but also questions posed during the earlier stages of the operating license review.

2708 Hood states that the following statement "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 assurances". Refers to both soil settlement issues and operating license review issues. The first part of that statement is primarily drawn from experience in the overall FSAR review whereas the latter part of that statement relates primarily to soil settlement matters.

2709 Late in 1979 approximately at the same time the Corps of Engineers was coming on board, the geotechnical reviewer changed from Dan Gillen to Joseph Kane.

2710 Hood agrees that once you take the diesel generator building down you would not preload it, therefore, pursuing the removal

- and replacement option would have precluded the preload option. It is Mr. Hood's opinion that the preload provides a more reliable prediction of settlement than taking soil borings.
- 2712 The dispute over the surcharge program was partly one of technical differences, however, there is also an element of timeliness and the fact that the Staff was looking for information at a particular point in time and that Consumers did not provide the Staff with such information.
- 2713 Page 12 of Hood's testimony states that Consumers proceeded with construction of the borated water storage tanks without first performing the analyses for variable foundation properties and cracks as discussed in response to 50.54(f) request 14. Question 14 was issued in March of 1979.
- 2715 Hood recalls that during the Summer of 1979 there was an investigation of the cracks as they then existed in the borated water storage tank foundation ring. Conclusion of that investigation was that the cracks are localized and that their widths do not exceed 1/200 of an inch.
- 2716 In the Summer of 1979 Consumers also evaluated the fill material beneath the tanks.
- 2717 The results of that investigation were reported to the NRC prior to construction of the tanks. Actual construction of the tanks began in September of 1979.
- 2718 Hood reiterates that the crack maps and the evaluation of the soils underlying the tanks were provided to the NRC at some point prior to September of 1979.

- 2719 It was Consumers position that the cracks in the tanks were not significant, that is, they were only shrinkage cracks. Hood recalls that the structural reviewer Ron Babinski had some reservations about those cracks. It was his view that some of them were probably structural cracks as opposed to shrinkage cracks and he felt that a great deal of information was needed concerning the cause of the cracks, not only in the tanks but in all other structures at the site. Hood stated - I don't believe that the Staff was satisfied then, and I don't believe that they are satisfied to date that the cause and evaluations of those cracks are that conclusive.
- 2720 During the construction of the tanks, no one from the NRC stated that the Staff was dissatisfied with Consumers crack analysis and therefore don't build the storage tanks.
- 2721 The Staff, however, inquired as to whether the tanks could be removed if need be and Consumers responded that yes, they could, although it would not be a simple task.
- 2721 What Hood had in mind when he stated that Consumers had a "tendency to push ahead despite the lack of proper assurances", was the fact that Consumers had not performed those finite element analyses with respect to the borated water storage tanks that assured the Staff that the ring structure was worth salvaging. Consumers approach was to proceed with construction of the tanks and to determine afterwards whether the ring foundation was suitable.

- 2723 Question 14 does not specifically request finite element analyses, rather it asked for an evaluation of the abilities of certain structures to withstand increased differential settlement.
- 2724 It was Consumers position that excessive settlement would not occur around the borated water storage tank foundation rings. The Staff never communicated to Consumers that it believed excessive settlement was going to occur around the borated water storage foundation.
- 2725 Hood does not recall that the Staff told Consumers that it lacked reasonable assurance with respect to construction of and filling of the tanks.
- 2726 Hood cannot really remember if the Staff in some communication told Consumers that they were not finished reviewing their decision to construct and fill the tanks or if the Staff in any way communicated its lack of assurance with this approach. Hood notes also that the Staff never concurred in Consumers' decision to proceed with construction and filling of the tanks.
- 2727 The tanks were discussed at the July 18, 1979 meeting. At this meeting, no one from the Staff said, don't proceed with construction of the tanks, we have reservations. Indeed, no one from the Staff made such a statement in any earlier meeting.
- 2729 Examination of Hood by the Licensing Board begins. With respect to the phrase "material false statement" the word false has no connotation of intent. False means inaccurate. The

question of intent is relevant only to the type of enforcement action taken.

2730 Hood does not intend to convey any sense of intent when he uses the term material false statement.

2730 Hood states that in a broad sense the breakdown in QA reflected on the lack of management dedication.

2731 Hood cannot conclude that the four candidate statements for material false statements were the result of management incompetence. Rather, they were the result of a lack of dedication to details.

2733 Paragraph 1 of Enclosure 2 to Attachment 17 of Contention 1 the five examples listed therein were not considered synergistically, but rather they were considered in terms of the type of enforcement action or order which might issue.

2734 Attachment 9 to Contention 1 on page 2 lists five types of documents that the NRC has requested from Consumers. Hood repeats that it is only item 4 that is the documentation of the qualification of compaction equipment which reflected poorly on managerial attitude.

2734 The two replacement documents mentioned on page 9 of Hood's testimony have been forwarded to the Staff in a timely fashion.

2735 On pages 10 and 11 of Hood's testimony, he does not attribute certain statements to Consumers but rather attributes them to Bechtel's consultants. Hood explains that this was his interpretation from reading the meeting summary which is found

in attachment 13. Hood admits that this is giving the benefit of the doubt to Consumers.

2736 Hood states that the Staff does not usually give the benefit of the doubt to the Applicant when the information has safety significance. Hood approached supplement 2 to Contention 1 from the standpoint that the information with respect to who said what is readily obtainable during the process of this hearing. Because of that, Hood did not inquire of Consumers who actually had made that statement referenced in the Contention. Hood repeats that the Staff never told Consumers not to place the surcharge until the NRC had completed its review.

2737 Hood does not recall any encouragement on the part of the Staff to proceed with the surcharge. In short, the Staff was in a neutral position; that is, it was trying to acquire sufficient information to be able to be in a position to take a position on the surcharge. Hood states that Consumers should have known that the Staff did not have enough information to reach a position on the advisability of the surcharge program. Since the information Consumers supplied to the Staff was not complete there were certain analyses that had not been done and there were commitments that these analyses would be provided at a later date.

2738 The questions posed by the Staff to the Applicant which elicited the response that the analyses would be provided later were probably given to the Applicant while the surcharge was in

place. The Applicant's response indicated that the Staff was receiving criteria after the surcharge had been removed.

2739 With respect to the borated water storage tanks, the Staff was attempting to acquire information which would permit it to independently conclude that the tank ring was sound. After receiving certain assurances from Consumers, the Staff did not raise any objection to Consumers proceeding with the construction of the tanks at its own risk. The NRC Staff had not completed its evaluation of the borated water storage tank foundation ring at the time that construction of the tanks proceeded nor has it completed its evaluation today.

2740 The Staff still has some doubts concerning the soils beneath the ring foundation. In fact, the last few months the Staff has requested certain consolidation tests for that structure.

2741 Hood states that it would have been a more prudent approach to have received some type of analysis prior to the beginning of the proof test of the tanks. The Staff, however, never explicitly stated that it would be more prudent for Consumers to do the analysis prior to proceeding with the proof test. Hood believes, however, that the Staff's position was implicit in the questions the Staff posed to Consumers.

2744 The piles which were originally proposed to fix the service water structure were ultimately rejected after the new seismic approach was adopted. The piles fix would not have offered a sufficient seismic margin. The new seismic approach also

caused Consumers to change the fix for the electrical penetration area from a cassion to a concrete pier.

- 2745 The greater margin provided by the two changed fixes will accomodate either of the two Staff approaches set forth in the Tedesco letter.
- 2746 The new fixes, therefore, are based on the site specific response spectra which is consistent with the use of the central stable region.
- 2747 When Hood stated that he felt insufficient review attention was being given to the Midland case in 1979, he meant to imply that the timeliness of the review was being affected, but not that the depth of the review was being affected.
- 2748 Hood states that it would be useful to have an NRC onsite geotechnical engineer full-time during the remedial soils actions.
- 2749 Hood states that he thinks either having an NRC geotechnical engineer onsite full-time would be effective or having an NRC person working full-time on the Midland soils remedial actions, however, not spending 100% of his time on this site would also be effective. Either case in Hood's opinion would accomplish the objective.
- 2750 Hood thinks it would be advisable to have an NRC geotechnical engineer overseeing these remedial actions because they are of a highly specialized variety. Hood does not believe the need for the NRC geotechnical engineer emanates from the fact that Consumers has had problems with soils placement activities in

the past. Furthermore, Hood states that by having an NRC person directly observing the remedial action it will be easier to reach a decision on reasonable assurance after the completion of the fix.

2751 Hood qualifies that his position on having an NRC geotechnical engineer onsite is his personal opinion and not one that his management has approved.

2752 Hood describes the two areas of Staff concern with respect to the diesel generator building. One concerned the degree of detailed information that Consumers provided the NRC prior to commencing the surcharge. Another problem concerns verifying the effects of the surcharge. Consumers believed the surcharge program itself is a sufficient indicator of future settlement. The Staff, however, wants additional information which will be acquired by means of borings. This boring information in conjunction with the pre-load data will form the basis for future settlement predictions on the part of the Staff.

2759 The diesel oil fuel tanks are safety related structures which are embedded in the film material. With respect to these fuel tanks, Consumers filled them and observed settlement over a six month period. Hood believes but is not absolutely sure that the results of the filling of the diesel fuel tanks demonstrates that the fill beneath those tanks is satisfactory.

MIDLAND PROCEEDING JULY 17, 1981

- 2761 Examination of Donald M. Turnbull. The professional qualifications of Turnbull is inserted after page 2761.
- 2762 Turnbull is the site quality assurance superintendent in the Midland project quality assurance department. He has been in this position since November of 1980 and he reports to the QA manager, Mr. Walter Byrd.
- 2762 Turnbull is responsible for supervising three sections. The administration, the quality assurance and engineering and inspection evaluation sections. He has responsibility for the trend analysis program. It is his responsibility to see that the trend analysis program is done well and that the results are useful.
- 2764 Turnbull describes what trend analysis is. He stated that non-conformance reports, deviation requests, audit finding reports, and quality action requests are collected as quality indicators and are classified first as to the area or activity which is responsible for the problem, and secondly according to the nature of the problem. The number of such indicators on a monthly basis is entered into a graphic record. This graph will indicate whether there has been any significant change in the level of that activity.
- 2765 Since joining Consumers Power Company in December of 1980, Turnbull has been evaluating the trend analysis program and has concluded that there is room for improvement and changes. The

company has come up with some changes which they are in the process of incorporating into the trend analysis program. These changes, however, will run concurrently with the previous program until its proven that the changes are of significant benefit. Approximately 10 individuals in his department are responsible for trend analysis.

2766 Consumers Power Exhibit 8 entitled "Trend Analysis" is marked for identification. This document was prepared by Turnbull to serve as prompting notes for a discussion on the trend analysis program with the supervisors in his department. This discussion occurred in March of 1981.

2767 The purpose of this March meeting was to try ^{tw} ~~and~~ identify any problems that had been experienced by those people responsible for evaluating and analyzing trends. One of the problem areas discussed at this meeting concerned the number of categories into which defects were being placed. It was felt that there were not enough categories in which to adequately place certain defects.

2768 A further problem area was the lack of uniformity among individuals in the way in which each was analyzing the trend graphs. Consumers Power Exhibit 9, a document entitled "Discussion of Summary of Meeting on Trend Analysis, April 10, 1981" is marked for identification.

2770 Consumers Power Exhibit 9 is a summary of a meeting that followed the March 1981 meeting. Consumers Power Exhibit 10

which consists of 4 pages of handwritten notes is marked for identification.

2771 Consumers Power Exhibit 10 is a set of preparation notes for a meeting Turnbull had after the April 10 meeting. The line that is drawn through paragraph 2 of that exhibit represents Turnbull's decision prior to the meeting not to present that topic. He deleted that from the material that he used in the meeting.

2772 Consumers Power Exhibit 11, a memorandum from Turnbull to Messrs. Byrd, Marguglio and Dietrich, dated May 19, 1981, subject Trend Program Phase III is marked for identification. The purpose of this memo was to point out who had responsibility for establishing the quality assurance policies and also in pointing out which areas had been discussed recently and in which areas improvements could be made.

MIDLAND TRANSCRIPT SUMMARY OF JULY 17, 1981 EXAMINATION OF TURNBULL

- 2773 Consumers Power Exhibit #11 is the same memo which is referred to on page 19 of NRC Staff Exhibit #1.
- 2774 The new program is going to have eight categories instead of four in which defects can be placed. The new program also provides better definition of the categories themselves. It also defines the thinking process to be used during the analysis of the trend in order to improve the uniformity with which analyses are made. Consumers Power Exhibit #12 a document dated June 16, 1981 entitled "MPQA Site Operating Manual Procedure #SOM-2" is marked for identification.
- 2775 This is the new procedure and program which Turnbull has been testifying about. Turnbull is responsible for issuing a truncated list of all quality indicators. This list goes to top management people. The purpose of the list is to bring to the attention of top management, those problems which are considered to be most pressing. This list also shows, by means of a computer program printout, a figure which reflects the age and the importance of the problem.
- 2777 Consumers Power Exhibits 8-12 are received in evidence. The Board indicates that cross-examination of Mr. Turnbull will proceed during the 2nd week of the August session.