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MEETING OF THE NRC STAFF
WITH CASE

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

MEETING OF NRC STAFF WITH CASE

Bethesda Holiday Inn
8120 Wisconsin Avenue
Bethesda, Maryland 20814

Wednesday, November 20, 1985

The meeting reconvened at 9:00 a.m., Vincent S. Noonan presiding.

ATTENDEES:

CHARLES M. TRAMMELL, NRC
JOSE A. CALVO, NRC
J. F. SCINTO, NRC - ELD
GEARY S. MIZUNO, NRC - ELD
H. S. PHILLIPS, NRC - Region IV
C. J. HALE, NRC - Region IV
H. H. LIVERMORE, NRC - Region II SRI Vogtle
T. A. IPPOLITO, NRC - AEOD
ANNETTE VIETTI-COOK, NRC/NRR/DL/CPP
VINCENT S. NOONAN, NRC
R. KEIMIG, NRC
LAWRENCE J. CHANDLER, NRC/OELD
BILLIE GARDE, CASE/Trial Lawyers for Public Justice
ANTHONY ROISMAN, CASE/Trial Lawyers for Public Justice
PAUL KESHISHIAN, NRC/TRT Staff
DONALD LANDERS, Teledyne Engineering Services
TONY BUHL, SRT/CPRT/IT Corporation
ROGER ROHRBACHER, NRC/IE
IAN BARNES, NRC/RIV
SPOTTSWOOD B. BURWELL, NRC/RRR/DL/CPP
DAVID C. GARLINGTON, Southern Engineering
JACK REDDING, TUGCO
R. A. WOOLDRIDGE, WFS&W/TUGCO
J. W. BECK, TUGCO
J. L. FRENCH, MAC/CPRT - SRT
W. NYER, CPRT - SRT
J. GUIBERT, TERA/CPRT - SRT
R. K. GAD, III, Ropes & Gray
ROY P. LESSY, JR., Morgan, Lewis & Bockius
SIVA KUMAR, Gibbs & Hill
CHET POSLUSNY, NRC/NRR/CPP
BEN FINDELSTEIN, Spiegel & McDiarmid (Brazos G&T)
T. E. CURRY, TRT
R. W. BONNENBERG, TRT
M. W. ELI, TRT
V. W. WATSON, TRT

-- continued --

ATTENDEES (Continued):

V. L. WENCZEL, TRT
J. H. MALONSON, TRT
R. H. WESSMAN, NRC/NRR/DL
WILLIAM C. WELLS, TRT
R. W. HUBBAUSS, TRT
VICTOR FERRARINI, TRT
R. MASTERSON, TRT
C. D. RICHARDS, TRT
W. P. CHEN, TRT
BOB PHILLEO, TRT
CHARLES HOFMAYER, TRT
DAVID C. JENG, TRT

P R O C E E D I N G S

MR. NOONAN: I guess we would like to go back on the record. We're starting the second day of our meeting with Citizens Association for Sound Energy, the representatives, Mr. Roisman and Ms. Garde. We are continuing with Mr. McCracken from the coatings area. I would make one request. If people feel the need for a smoke, please do it outside, if you don't mind. With that, go ahead.

MR. ROISMAN: Mr. McCracken, we were on page M-4 when we stopped last evening. I would like to move over to M-5, and the paragraph "communications with TUEC." Can you describe what was the purpose of the communications that you had set up with TUEC? You indicated, for instance, in the first paragraph at the bottom of M-5, there were frequent staff level contacts between technical review team members and TUEC personnel during on-site -- what was the purpose of the meetings?

MR. MC CRACKEN: The meetings occurring at that specific time were to evaluate the specific allegations and the global review that the coating people were in the process of doing. We were reviewing specific documentation and individuals in various positions on-site with knowledge about the documentation, NCRs, IR, and so on.

MR. ROISMAN: When you ran into a problem, was

it the practice to go back to someone from TUEC to see if they could explain either why it was not a problem or explain their position on it? Was that one of the purposes of the meetings with the TUEC people?

MR. MC CRACKEN: No, I don't think we were trying to get answers from TUEC at that point. We were trying to conduct an investigation. If we found a paperwork trail which did not go where we thought it should go or there seemed to be something missing, we would go to them to see if we had somehow misunderstood the system or if there was another means of obtaining what we were after.

MR. ROISMAN: There may have been instances where our team would find what appeared to be a problem, they would go to TUEC and they would give what your people felt to be an adequate explanation and that would never appear in this SSER as a deficient condition if they accepted that explanation from the TUEC people.

MR. MC CRACKEN: No, I didn't say that. We would talk to the people, try to complete our paperwork trail. If it was something we were investigating like an allegation, the results of all our investigations were fully included in here. If somebody explained something, it said in here: that's what we did.

MR. ROISMAN: So every item you looked at that caused you to believe there might be a deficiency, even if

in a conversation with TUEC you became persuaded there was not, they are all documented in here. There are none dropped off because an explanation was given that may have satisfied your people during the investigation.

MR. MC CRACKEN: I can't say categorically none occurred that way, but of the 62 allegations, they were followed all the way through.

MR. ROISMAN: On page M-6, you discuss a series of the meetings with TUEC representatives to discuss -- this is sort of like in the middle of that paragraph -- to discuss this proposed program plan on October 19 and the 23rd; then I talk about a partially revised program plan on November 21, then a letter from the NRC; and finally in January '85, an NRC letter issued informing them of technical review team's preliminary findings. What was the program plan they were working on and how does that fit, if it does, into what we now know as the CPRT?

MR. MC CRACKEN: That is a general statement which was included in the SSER as part of what management was doing at that time.

MR. ROISMAN: Management meaning Nuclear Regulatory Commission management?

MR. MC CRACKEN: Vince Noonan. Therefore any questions in that specific area should go to Vince.

MR. ROISMAN: Could you sort of put that into

the context of the CPRT and what is that and how does it fit into it?

MR. NOONAN: Let me read the paragraph here. Okay, reask the question.

MR. ROISMAN: Beginning about the middle of the paragraph on page M-6, there's a discussion of the NRC meeting or the TRT meeting with TUEC representatives to discuss something described as the proposed program plan, and then in the next sentence, a partially revised program plan; then the reference is made to a November 29 letter and finally to the January 8, '85 letter. What is this revised and proposed program plan and how does it fit into what we now know as the CPRT?

MR. NOONAN: We have in front of us, I guess the program plan that we now have on the docket is the revised program plan for the CPRT. That is the only program plans I'm aware of that are called revised program. That's the CPRT activities. It has the work done by DRC, the Tera work, ISEPs, the self-initiated programs, and that is also the same program plan the Staff has now sent out questions on which we call the programmatic question, 11 programmatic questions and all the other questions we had on individual ISEPs. Did that answer your question?

MR. ROISMAN: Well, you are answering but I don't know whether I'm understanding.

(Discussion off the record.)

MR. NOONAN: My staff member reminded me. Initially the applicant submitted a program plan in response to the letters. The electrical letters to the QA letters.

MR. ROISMAN: These are the CPRT letters?

MS. VIETTI-COOK: It just was the first -- because we -- I don't think we issued the QA letter. It was just they might have been the first, like SSER, the electrical, mechanical, just the first couple SSERs and it addressed the specific technical review team issue.

MR. NOONAN: That was the first that came out. When we had sent the QA letter out, it had not included it. We said this is not really what we're looking for. What we need is a program plan to respond to the global problem. That was really what I call the global problem, all the safety things on the screen, and we asked for the so-called revised program plan, it was the first plan where they put it all together in one document to address all the SSERs and how the CPRT is going to respond.

MR. ROISMAN: There's a reference to a revised program plan on November 21 of '84 being submitted by TUEC. Did you understand at that time that that was the CPRT or --

MR. NOONAN: No. That was not the CPRT at that point in time.

MR. ROISMAN: There was a different approach that the applicant was originally going to take which is not the approach which is now represented by the CPRT; is that correct?

MS. VIETTI-COOK: It was more specific.

MR. NOONAN: It was the revised plan was more specific than the original one. Go ahead.

MR. SHAO: At that time, after we did the review, we wrote a letter to the utility and we expressed a concern, an applicant submitted a program plan to address these letters and these are the program plans. Later when the CPRT did come over, a lot of the program plans had to be put into the CPRT overall plan.

MR. ROISMAN: Is it your understanding, Mr. Noonan, that at this point in time, any of the concerns that were identified in the original technical review team letters are being addressed or have already been addressed by some program plan or revised program plan that is not the CPRT?

MR. NOONAN: Is not the CPRT?

MR. CHANDLER: Are you talking about the context as used in that program?

MR. ROISMAN: Right. These refer to program plans as responding to something.

MR. NOONAN: Wait a minute. I want to be sure

I'm talking about the right document.

(Discussion off the record.)

MR. NOONAN: The best way I can describe it is one of a development process, where the first thing that came in was basically responses to the individual SSERs. Then we asked if that wasn't sufficient and we then brought it back -- I shouldn't say "we" -- the applicant came back into what he called the revised program plan that gave birth really to the CPRT. And even today, there are still some things, answers to our programmatic questions. All the other questions we have out there, we're waiting for that response at this point in time. So it is developing from the standpoint where the contract CPRT was brought in from the original group of people, and added. Things have been added. There's additional people been brought in, different set-up the way things are done now.

MR. ROISMAN: Let me explain what it is I'm trying to make sure that I'm not missing anything on. If everything that has been responsive to the various concerns expressed by the technical review team, starting with letters and then with conversations and then eventually with the SSER, is now all encompassed within the CPRT, then I know if I ask the Staff later a question and use the CPRT as the tag, that I'm going to get everything that you have done with respect to that problem. And I'm just trying to

make sure that there are not some subset of technical review team issues that either got addressed and dealt with or are being addressed and dealt with now outside the scope of the technical review team and that's what I want to make clear. As I understand your answer, it is no, everything is being dealt with under the CPRT umbrella even though some of it started off in a program plan that was not what we call the CPRT.

MR. NOONAN: That's correct.

MR. CHANDLER: I'm not sure that was wholly accurate. At the risk of coaching, let me speak with him.

(Discussion off the record.)

MR. NOONAN: What Mr. Chandler reminded me is that the CPRT is basically set up as a third- party group of people looking at the work being done on the site. There is work being done by Stone & Webster on piping, pipe support, done on what we call the project. In my mind everything will come to me, though, under what we call the CPRT program plan. All that work eventually comes into that one funnel. I think the answer is -- I know the answer is still yes to the question. We will address everything.

MR. ROISMAN: The clarification you're making is that merely some of the work, instead of being done by the "independent" people, may be done by other people.

MR. NOONAN: Yes. CPRT.

MS. VIETTI-COOK: The applicant referring to CPRT includes third-party review, work being done by the project, et cetera, so that's all CPRT. The third-party end project work is my understanding.

MR. ROISMAN: I'm trying to make sure we have a terminology we could use as shorthand at future times. When I want to say to you, has this been resolved to your satisfaction by the -- and then I could insert "CPRT" and we'll know that we're talking about all the different ways in which the input comes in.

Back to you, Mr. McCracken. In the development of the proposed TUEC responses to the concerns raised in this SSER, it appears that there is no determination that the TUEC should come back and answer to your satisfaction the question: Why did this happen? Why did these problems crop up in your system? Am I correct that in this SSER, you are not asking them to answer that question in their response to you?

MR. MC CRACKEN: That's correct.

MR. ROISMAN: And similarly, you are not asking them to answer the question: What are the generic implications of what problems we have found? Is that correct?

MR. MC CRACKEN: The generic implications in the

area of coatings we handle by the way we conducted our review and examination using a global approach. An effect on the overall QA/QC program is being considered by the fact that we have referenced the findings we had to the QA/QC group to use in their evaluation of the overall plan, QA/QC program.

MR. ROISMAN: When you developed that approach, was it your understanding that the QA/QC group would either determine root causes and generic implications or impose upon the applicant the responsibility to determine root causes and generic implications?

MR. MC CRACKEN: I did not have any notion, preconceived notion of exactly what the QA/QC group would do other than they would take the results of our findings They would not go back and reinvestigate what we had investigated. They would look in the specific areas where we had found deficiencies. If they found no additional deficiencies, they would probably conclude that this was confined to coatings only. If they found additional deficiencies, they would use the deficiencies identified in coatings as additional information to evaluate the overall program. What the picture of that evaluation would look like, I didn't get involved in.

MR. ROISMAN: When did you become aware that the coatings would be removed from Q classification? When did

you feel that that was going to be the result of that review?

MR. MC CRACKEN: Sometime in February of 1985.

MR. ROISMAN: And the letter, the technical review team letter related to the paint coatings had preceded that -- correct? -- at the time that the letter --

MR. MC CRACKEN: There was not a coatings TRT letter to the applicant.

MR. ROISMAN: You had just the Brookhaven letter that raised the concerns; is that right?

MR. MC CRACKEN: The April of '84 Brookhaven letter had gone out prior to formation of the TRT.

MR. WESSMAN: Mr. Roisman, the November 29, 1984 letter that dealt primarily with mechanical letters had a one-paragraph comment concerning our status of the coatings review. I think that's the only time in our letters to the applicant that we actually addressed the coatings issue.

MR. ROISMAN: Did you from the outset of this investigation into the paint coatings matter decide that you would not either look for root causes or that you would not direct that somebody else look for root causes? Was that a decision that had been made from the outset of the review?

MR. ROISMAN: I think it is necessary to define what you mean by "root cause."

MR. ROISMAN: What I mean is to find out the answer to the question, why were procedures not followed or why was an NCR not done or why was paint that was not properly applied not previously detected and why was the paint not properly applied to begin with. The answer to the why question is what I mean by "root causes."

MR. MC CRACKEN: The specific instructions to the coatings TRT group was that they were to review the allegations they had, to expand that review sufficiently such that if additional allegations were to come in in any of the seven categories that were defined that they could be able to address those additional allegations by having brought enough global review in to draw an overall conclusion as to the technical acceptability of the coatings at Comanche Peak. There was not any intent to go beyond that and fix blame to any specific individuals if something was or was not correct.

MR. ROISMAN: I'm not thinking so much of the question of blame to people as I am interested in the extent to which you were trying to find out why something happened in order either to determine whether you should look at other places, because that particular why would lead you to think that another part of paint coatings might fail as well. You are telling me that that was not in your plan?

MR. MC'CRACKEN: No, as I said yesterday, as an example I used in the procedures area, when we found that something was incorrect as a consequence of procedures, if you go back to the procedures category in the SSER, you'll see we addressed all the procedures involved in coating. So we did not stop at the one procedure where we found something wrong. Because of our global review we would review all the procedures to determine if in fact there was a problem in all the areas or one or two areas, so we did try to see why something was wrong in the implementation that was going on at Comanche Peak.

MR. ROISMAN: All right, how did I ask my question before that made you say no and now you say, yes, we did look at why something was wrong? Was there something about that earlier question, was there some element in there that made you say no? This isn't a trick question. I'm trying to find out why we are not understanding each other about this.

MR. MC CRACKEN: I think because in some cases, it sounds as though you're asking technical question. If you are, the answer is we look into the why. If you ask me beyond the fact that it was either training or procedures or qualification of individuals, then I didn't go to find out beyond that why that deficiency existed.

MR. ROISMAN: So there was in your mind a line

drawn, and one side of the line you have characterized as technical considerations, which include procedures and the process and all of those things but does not include what we'll call management attitude, and as long as you were on the technical side of the line, you were looking for the why, but if you got to a point where you didn't know, why didn't this procedure get written properly, you stopped. You said, no, that's not my responsibility. I'm not going to answer that question. Is that a correct line?

MR. MC CRACKEN: Once I had made the technical determination that something was either correct or incorrect and the technical reason for it being correct or incorrect, I did not then go further back to find out why that was incorrect. For instance, if a procedure wasn't properly written, I did not go back to find out if the procedure was improperly written because of which individual in the chain of command.

MR. ROISMAN: And I know we talked yesterday about procedures, and you indicated that it is a sort of small batch of procedures --

MR. MC CRACKEN: Relatively small.

MR. ROISMAN: Relatively small. But let's talk about training, for instance. If you were trying to find out why a particular problem existed and you discovered that the inspector who was doing the inspection was not

properly trained, as I understand it, you would not then go back to find out, well, why wasn't he properly trained. You would now know why it was that this particular piece of painting had not been properly inspected and could stop there. What about the implication of learning why inspector A was not properly trained?

MR. MC CRACKEN: No, I think you're still in a technical area. If we looked and found that a given inspector was improperly trained, we would review his training records and others' training records to find out if there was an indication that we had more problems in inspector training.

MR. ROISMAN: So you used an assumption that, without trying to validate that assumption, that if one person was improperly trained, others might have been, rather than looking for the cause of that person's failure to be trained and being able to then isolate it and say, the reason this guy wasn't properly trained is that every morning when they were doing the training sessions he was sleeping. That would be one way to stop and not have to look at the rest of the inspectors.

MR. MC CRACKEN: That I think would be looking at the program with blinders on, and we tried not to do that. We tried to look at each of the allegations that we had and go a global review. If we found no substance to

any given allegation, that did not alter the fact that we continued to review beyond that in each of the seven areas to see if we ourselves found something additional.

MR. ROISMAN: What portion -- strike that.

What part of the applicant's paint coatings program did you find did not have deficiencies in them?

MR. MC CRACKEN: To the best of my recollection, I don't think there were any areas that we didn't identify some deficiencies. In some cases they might have been relatively small, but I think in each of the seven categories we identified that we identified some deficiencies.

MR. ROISMAN: Were there any areas where you identified more deficiencies than what you would expect to find in any large construction project?

MR. MC CRACKEN: I don't recall at this time. I would have to go back and reread the section of the SSER to comment on that.

MR. ROISMAN: Would the SSER disclose that to anyone reading it or would you still have to take a look at it and answer my question based upon refreshing your memory?

MR. MC CRACKEN: No, I think we attempted to write the SSER in the various categories sufficiently well that somebody reading it could draw that conclusion and their own if they chose to do so. It may not say so in

those specific words, but we always try to put in the number of examples we used when we took a so-called legal example.

MR. ROISMAN: Maybe at the break, if you wouldn't mind glancing over it and see, because your assessment and being able to say in looking at it, that was more or not more than I would have expected to find in a large project is a lot more valuable assessment than mine in reading over the same thing. So if you could, I would appreciate having that.

MR. MC CRACKEN: I would be glad to do that.

MR. ROISMAN: Do you remember yesterday this document, the technical review team guidance, June 1984, document that was talked about and produced?

MR. MC CRACKEN: I read that roughly in that time frame, and I have not looked at it since.

MR. ROISMAN: Was this the guidance that you used for purposes of the paint coatings review? Did you follow this guidance?

MR. MC CRACKEN: That guidance was read by the person who preceded me as the coatings TRT inspector, Phil Matthews. I believe that we followed those guidelines.

MR. ROISMAN: In this document there's a paragraph B, which I guess is part of the attachment to the whole document that relates to -- this appears to be

attachment 3, instructions to technical review team, and paragraph B is discussing prepare work packages and related information, a work package cover sheet is shown in annex 1. "Group leaders should review allegation file to identify essential allegations; the numbers of essentially identical allegations should be recorded in the work package and documented in the allegation tracking system." And then there's a series, and I'll show this to you, a series of things you are supposed to do. Number 7 is "consider generic/management implications." I want to know what you understood that was asking you to do and how you did that in the context of the paint coatings review.

MR. MC CRACKEN: I'll take a minute to read the whole paragraph. In that particular area, the instructions to the best of my recollection were that if you saw some specific evidence of a difficulty with the management approach, that you would go ahead and identify it.

MR. ROISMAN: But not that you should go out of your way to look for it?

MR. IPPOLITO: Excuse me. Let me help you out there. When we wrote those instructions -- and I refer you back to the diagram of the TRT where you see a dotted line going from every team leader, dotted line over to QA/QC. That thing is a reminder to all the group leaders that if they find something in their review of the technical issues

that have to be referred to "QA/QC management," they should be aware of that and make sure it gets to the right source.

MR. ROISMAN: You're telling me that the phrase "consider generic/management implications" means refer generic/management implications to QA?

MR. IPPOLITO: That's correct.

MR. ROISMAN: It did not mean that the people who were doing the technical work in the specific technical areas should attempt to find the management implications but only that if they stumbled on them they should make sure that QA was aware of it.

MR. IPPOLITO: I don't like the word "stumbled," but I get what you mean, yes. If you recall, you got the same answer when you asked the same type of question from Jose yesterday. That is --

MR. ROISMAN: Can you understand why I'm asking it of each individual TRT leader?

MR. IPPOLITO: I've answered, he's answered and he's answered. They are all following the same procedure.

MR. ROISMAN: Everybody else is going to answer it so I know they were all following it. Unless you want to testify for them. You may have that opportunity some day.

Looking now at page M-10, just before the

paragraph that begins 3.4, says, "The allegation that some instructor functions were performed by inadequately qualified personnel was substantiated. The extent to which these deficiencies effected the quality of the coating work is undetermined." Is it indeterminate because it was indeterminable or because the nature of your investigation did not include answering that question?

MR. MC CRACKEN: The particular paragraph you're looking at, which comes under section 3.3, findings for protective coatings issues, is simply an excerpt that comes out of the individual categories where it is discussed in more detail. I believe in this particular case that it is indeterminate because it was technically indeterminate not because we did not investigate it. I don't believe there's any case where we conclude that something is indeterminate and we have not investigated it. It is indeterminate because we could not determine it one way or the other.

MR. ROISMAN: Just so I understand this distinction between the ultimate why and what I will call the intermediate why question, look at the last line of the paragraph at the top of the page on M-10 that says "These procedural deficiencies indicate inadequate performance by those responsible for the review and approval of the coating procedures." Now, you are talking about inadequate performance in an objective sense; that is, as I understand

the statement, you are saying it is almost a tautology. It didn't work. It must have been inadequate performance. Is that correct?

MR. MC CRACKEN: Yes.

MR. ROISMAN: Not trying to find out whether it was an inadequate performance by some deliberate effort to get around some procedural requirement or negligence or fear or anything else like that?

MR. MC CRACKEN: That's correct.

MR. ROISMAN: All right. Now on page M-11, in the very concluding paragraph, you indicate that "The deficiencies which were found, although now determined not to be of safety significance, will be considered in evaluating the effectiveness of TUEC's overall program."

Do I understand that you were making a determination, based, I assume, on part L, that there is no safety significance, not only the design basis accident safety significance but no safety significance to the status of the paint coatings at Comanche Peak at this point? Is that what you are intending to say there? Is that correct?

MR. MC CRACKEN: What I am saying there is based on the findings in Appendix A, the coatings no longer have to be qualified, that these deficiencies are not safety significant in the coatings area.

MR. ROISMAN: Is the phrase "in the coatings area" intended to mean that they might be safety significant in some other area or could the statement equally be made: "They are not safety significant period"?

MR. MC CRACKEN: What I am saying is because of the determination that coatings no longer have to be qualified, that even though we found deficiencies within the seven categories that we looked at in coatings, that they have no safety significance. However, the fact that when they were applied they should have been applied to all of these standards and we found deficiencies in that should not be ignored in the overall QA/QC review of the plant.

MR. ROISMAN: In doing your evaluation of the paint coatings program, what, if any, consideration did you give to the applicant's paint coatings history? That is, in 1981, as you know, there was a determination as a result of an inspection by region 4 that there were problems in the paint coatings and the backfit program evolved out of that, and in your findings you discovered that the backfit program itself had significant problems.

Did you attempt to put into perspective at all what, if any, implications there were as a result of that sort of two unsuccessful bites of the apple by the applicants to deal with paint coatings on site? Was that part of what you looked at?

MR. MC CRACKEN: You made a very long statement, and that I think asked a question. I'll try to answer what I think your question was.

MR. CHANDLER: If you don't understand the question, Mr. Roisman can break it into pieces for you or whatever.

MR. MC CRACKEN: I think I can probably do it sufficiently.

MR. ROISMAN: All right.

MR. MC CRACKEN: The coatings TRT was instructed to review the coatings program at Comanche Peak. That included looking at the allegations and broadening that scope such that they could see a global look at what the coatings in containment were like. Part of that included reading prior documentation, prior inspection reports and things that had gone on. But we did not assume that anything done before was necessarily correct. We went and did our own work.

MR. ROISMAN: Were you in any way attempting to determine what, if any, significance you should attach to the fact that the applicant's paint coatings program was already in a repair mode as a result of an earlier failure of the program to properly apply paint coatings?

MR. MC CRACKEN: No, we didn't attempt to draw on that. We considered the backfit test program as one

category in our overall evaluation, and reevaluated the backfit test program.

MR. ROISMAN: Do you believe, did you believe that if there were any conclusions to be drawn from the fact that even the repair program had not been carried out properly, and that that might have an implication for management's attitude or competence, did you believe that that should be reviewed in the context of the QA/QC evaluation?

MR. MC CRACKEN: I believe that the global review that we conducted of coatings accomplished the objective of seeing what the status of the coatings were throughout the plant.

MR. ROISMAN: But what about getting at the underlying why did the applicant even in its second attempt to apply coatings not apply them properly?

MR. MC CRACKEN: We reviewed the procedures, the training and so on associated with it. We drew specific conclusions as to whether they were or were not adequate. I think as we went back in the last sentence at the top of M-10 which you read earlier, where we said "These procedural deficiencies indicate inadequate performance by those responsible for the review and approval of the coatings procedures," you get the same response I gave you at that time.

MR. ROISMAN: Well, I guess maybe I'm making an assumption that you are not agreeing with. Do you agree that when a utility is into the repair mode with respect to a program like paint coatings, and doesn't carry out the repair mode properly, that there is more significance to that failure than if it was their first program which failed and they then put in an adequate repair program?

MR. MC CRACKEN: The backfit program is not a repair program. It was a program that was intended to evaluate the status of the coatings that had already been applied. So it was a new program different from what they had done in the past.

MR. ROISMAN: To make up for the failure to be able to previously properly document the status of paint coatings already applied?

MR. MC CRACKEN: The intent of that was that the prior coatings that had been applied did not have adequate traceability, and therefore, to demonstrate that in fact the coatings had been applied were sufficiently adherent, the backfit test program was an engineering statistical attempt to do so.

MR. ROISMAN: But your conclusion was the backfit program also did not accomplish that purpose? Is that correct?

MR. MC CRACKEN: We found deficiencies in the

backfit test program that are identified in that specific category.

MR. ROISMAN: Did you expect that the QA/QC review that was being done in Mr. Livermore's group would consider the implications of the fact that applicant at its second attempt was still not able to determine adequately whether paint coatings that had been applied had been applied properly and couldn't determine the status of those paint coatings?

MR. MC CRACKEN: I provided the results, our findings and conclusions to Herbie Livermore. If he considers it to be more significant that there were deficiencies in the backfit test program than there were in the original paint program, that's something he will have to address.

MR. ROISMAN: On page M-43, paragraph number 2, you are discussing those allegations, and in that discussion, you say, about the middle of the paragraph, that you did find "two instances of technically inconsistent inspection documents which may involve only a small area of liner coating. The TRT does not consider allegations AQO 54 and 55 to have any significant effect since the TRT believes that the area which was not reworked due to coating thickness out of tolerance is small." The use of the word "may" in the first sentence and "believes"

in the second, is that intended to indicate that these are not based upon what they know but based upon some assumptions that were made?

MR. MC CRACKEN: I would have to go back into the text that supported that particular conclusion statement to give you a full response to it.

MR. ROISMAN: Why don't we go back and take a look at that then? That's paragraph 8 on page M-40. It covers A 54 -- AQO 54 and 55, and then page M-37, paragraph 5-C, and the discussion of that appears on M-38 under the title "backfit test program documentation was forged or falsified."

MR. MC CRACKEN: That's several paragraphs to read, so it will probably take about five minutes.

MR. ROISMAN: Why don't you make a note and when we take a break, read that and take a look at the other question I asked you and we won't have to slow it up here.

Can you just explain so that I will understand it, how the coatings exempt log is supposed to work in a -- or how it was supposed to work at Comanche Peak as you understand it?

MR. MC CRACKEN: Coatings exempt log is maintained so that at the completion of construction, the applicant has a reasonable estimate of the total amount of coatings within the containment that are nonqualified. The

intent of that is to show that it is a sufficiently small amount that you would not have to be concerned about the effect if all of it failed on ECCS systems.

MR. ROISMAN: Is there a criteria that determines what is a sufficiently small amount? Is there a numerical guide of any kind?

MR. MC CRACKEN: No, there isn't. That's evaluated on each specific plant.

MR. ROISMAN: Is there any criteria for deciding, other than just the applicant deciding to do it, what you put into the coatings exempt log to begin with?

MR. MC CRACKEN: The material that goes into the coatings exempt log would typically be that which you did not apply according to the Q standards. For instance, you would get some small components from the manufacturer that you couldn't assure exactly how it was coated but you didn't want to go through and strip it and recoat it. That you put in the coatings exempt log.

MR. ROISMAN: Would it also be perfectly permissible for you at the end of a day of paint coating, the supervisor realizes that the wrong mix was used, no one picked it up and they don't want to have to paint it again. Is that all right to put that in the exempt log?

MR. MC CRACKEN: Yes, as long as you at the end modified the total you put in and can demonstrate that if

that fails it doesn't cause a problem.

MR. ROISMAN: So there's sort of an undefined reserve that the applicant is authorized to use subject to the possibility that at the end of the whole plant, the NRC might say, you've exceeded the reserve amount, you have to go back and qualify 10,000 square feet that you thought you could exempt?

MR. MC CRACKEN: Something like that, yes.

MR. ROISMAN: On page M-104, under the discussion of unacceptable seal coat, AQO 25, there's an allegation that certain stains on the liner were in the opinion of the paint coatings inspector, unacceptable procedure. Indicates here that the TRT interviewed the QC supervisor involved who indicated the stains were acceptable. He stated that the liner was wiped with solvent and water, that the QC inspector involved appeared to be satisfied with the work and that no pressure was placed on the QC inspector for him to accept the work as done.

Then the IR was reviewed and it was determined that the QC inspector had in fact signed it, and finally, the TRT could not verify that the QC inspector was coerced. At that point, did a referral of the matter to OI get made by the people doing the paint coatings review?

MR. MC CRACKEN: This particular one, as I

recall, was one that came from an OI report, but I don't have that series of records available.

MS. VIETTI-COOK: I can tell you in a minute. It came from an OI report.

MR. ROISMAN: Why would you do any review then of the, if you will, the argument side of it, the inspector saying that he signed off on it, but because he was coerced, and the supervisor saying, he wasn't coerced and it was okay? Why would you look at that at all inasmuch as OI had already looked at it except to review the technical merits of whether or not that particular liner plate did or didn't have proper stain on it?

MR. MC CRACKEN: That simply came about because we interviewed the people we could who were involved and checked the signatures on the sign-off, and in talking to the people, these were things that they stated, so we included it for completeness.

MR. ROISMAN: Your understanding of your responsibility would have been that if OI had completed an investigation and had said in their investigation, we can not determine whether the QC inspector was coerced, he said he was and the supervisor said he wasn't and we found his signature on the OI card, that you would not have gone independently to determine whether OI had made the right conclusions about that or draw your own evaluation from it;

is that correct?

MR. MC CRACKEN: That's correct.

MR. ROISMAN: So this was just an accident?

MR. MC CRACKEN: These were simply things that we learned during that particular investigation. So in the interests of completeness, we included what we had learned. We did not try to conclude whether in fact he had been coerced or not because OI had done that.

MR. ROISMAN: Well, the statement is that the TRT could not verify that the QC inspector was coerced. That sounds like you attempted to determine whether he was. I would have expected, if it is what you are saying, that the TRT did not verify or did not attempt to verify.

MR. MC CRACKEN: I think both statements would be correct. We could not, based on what we found, and we also did not make an attempt to do so.

MR. ROISMAN: I realize this is hypothetical, but I want to understand how you were working. Let's say that the person working on the TRT on this had gone to see the supervisor. And after meeting with the supervisor, the person on the TRT came away with a very distinct impression that the supervisor was lying. That was his instinct. He listened to the way he talked, the way he looked; he felt like the guy was lying, and he talked to the alleger and he thought the alleger was telling the truth and there were 10

other things that the alleger told him that were borne out, and the supervisor was the same one that said the training was good when it wasn't and the procedure was adequate when it wasn't so his judgment was, I don't think the supervisor was telling the truth. Would that have appeared in here if he had felt that?

MR. MC CRACKEN: No, and no place in here will you see us drawing an opinion as to whether one person is telling the truth or another person is telling the truth. We were evaluating facts.

MR. ROISMAN: The thing that troubles me is the phrase "the TRT could not verify that the QC inspector was coerced" has an ambiguity that makes it sound like you tried to verify it but couldn't, and you seem to be telling me that that's not what's meant to be conveyed by the sentence.

MR. MC CRACKEN: That's correct. Based on the facts that we looked at, the facts would not give us that and we did not then go through and try to determine by any further investigation whether that was in fact the case.

MR. ROISMAN: But I posit the hypothetical whose facts would allow you to reach that conclusion, the person observing the two people who were talking about this incident believed that the supervisor was lying and that the QC inspector was telling the truth, or, if you want,

that the opposite was true: the inspector was lying and the supervisor was telling the truth.

Now you have the data. Someone on the TRT could communicate it. Are you saying if that were the case they would not have communicated it even if they believed it?

MR. MC CRACKEN: We did not try as part of the TRT to make a determination as to whether an individual was or was not lying or had or had not been coerced.

MR. IPPOLITO: Let me interject here. I think the time that it was not, the team leader at site, so I think if you look at the instructions I gave my team leaders on site was that if they, using your hypothetical example, if they suspected wrongdoing, they would make that apparent to me with the information, and I would then transmit that potential wrongdoing to OI for their investigation. It is not that they would drop it if they suspected somebody did something wrong in the process of pursuing their technical evaluation. That's the way it would have been performed.

MR. ROISMAN: So to the extent that there are statements in this SSER that deal with such questions as whether an inspector claimed to have been coerced, whether he was not, all of those statements should be interpreted to communicate nothing more than that you were not trying to find out whether they were coerced or not, and anything

that you say about whether they were coerced or not should always be read to mean we were not trying to find out.

MR. MC CRACKEN: Should be read to mean that these are some of the facts that we turned up in our investigation, and therefore, in the interests of a complete record of what we did, we included it.

MR. ROISMAN: But you wouldn't reach conclusions from those facts in this report about whether one person was or was not coerced by another?

MR. MC CRACKEN: That's correct.

MR. ROISMAN: On page M-106, under paragraph 5, conclusions and Staff positions, at the end of the first paragraph, reference is made to allegations AQO 50, 52, 53 and 57, which you say were substantiated but the proper documentation and appropriate corrective actions were taken. "The TRT concludes that these allegations have neither safety significance nor generic implications."

My question to you really is this: Did you treat differently deficiencies that you found that the applicant corrected, either before you finished the report but after you had found the deficiency, or even before you found the deficiency but after the time that they should have corrected the deficiency on their own, then you treated those deficiencies which remained live from the very beginning all the way through the completion of your

report?

MR. MC CRACKEN: In the coatings area, all of the deficiencies remained live until we had left the site and wrote the report. There was no predetermination that any coatings area was not safety significant. Therefore, the investigation, the conclusions and Staff position were written after the total report of investigation was written on each of the individual allegations.

MR. ROISMAN: What I'm trying to find out -- let's take a look on the same page, a little higher up is the discussion of AQO 57, which is one of the allegations referred to in the conclusion paragraph. This dealt with the existence of filth, weld, splatter, tobacco juice and other unsuitable materials being on the wall before it was painted. What your people found was that, yes, that was true, that it had been painted over with a lot of filth there. And when you went up you found that the applicant was in the process of repainting it so it was being repaired. And I assume that when it says here "The allegations were substantiated; however, proper documentation exists," that it meant that the deficient condition was properly documented on the NCR and that repair work was being done?

MR. MC CRACKEN: Yes.

MR. ROISMAN: All right, was it your -- first of

all, did you look to see if the NCR was written at the time that it should have been written, at the time that if a QC inspector saw the problem, he should have issued an NCR? Was any attempt -- let's deal with that first -- to determine if the NCR was timely written?

MR. MC CRACKEN: In the review we conducted, the NCRs, we made an attempt to determine when they were written and when corrective actions were taken on them.

MR. ROISMAN: And is it possible to tell from looking at what we have here whether this NCR was written at the right time?

MR. MC CRACKEN: From looking at this, I can't tell that. I would assume in the background documentation that may be evident.

MR. ROISMAN: If it were not written at the right time, would the phrase "however, proper documentation exists," have been made?

MR. MC CRACKEN: No. There are instances in here where we have pointed out that the documentation didn't match.

MR. ROISMAN: You mean it came too late?

MR. MC CRACKEN: There are cases we indicated where in coatings traceability that paint was mixed after it was indicated it was being applied, which was impossible, or paint was mixed a week before it was applied, which

would not also be possible because it would set before it was applied. When there were instances we found like that, we indicated where it occurred.

MR. ROISMAN: Both of those instances might be instances of some kind of document tampering. This could be a perfectly innocent situation in that on the first review, for whatever reason, the deficiency was not detected. Subsequently, someone detects the deficiency. Maybe a little paint starts to peel and they can see the reason it is peeling is that the wall is in bad shape, and at that subsequent time the NCR was written up.

You would want it written up as soon as someone noticed a deficient condition, so in that instance the NCR would be proper, but you would also have wanted the deficient condition to be noted before the paint was ever put on, and therefore someone should have written an NCR at the outset when they started the painting or should have stopped them and said, don't paint it until you clean it.

Would you call it proper documentation in this case if an NCR was written when they first found the deficiency even though they should have found the deficiency a year earlier and didn't?

MR. MC CRACKEN: As long as the documentation exists which states the condition it was in and the NCR exists which stated it in fact was applied over filth and

so on, then that gave the correct paper trail to be able to come back and determine that this specific area had a problem.

MR. ROISMAN: But would you have found the a deficiency that the NCR didn't get written until after -- would you have found it a deficiency because the wall got painted with filth on it in the first place? Would that be something you would report in the SSER as a deficiency?

MR. MC CRACKEN: This particular one I did not review myself. If you would like me to see if I can get a more thorough review of this particular one or a more thorough explanation, I would be glad to.

MR. ROISMAN: I'm trying to find out what you understood the operating criteria were that the inspectors followed. I assume based on what you told me that the information is in documents that have been produced under the FOIA request. We can look and see what actually happened, whether the NCR was or was not long after the event had transpired.

I'm trying to understand what criteria were used by the paint coatings group. If the following conditions were the case: The wall gets painted with the filth on it and two years later, the NCR gets written that says that wall should be repainted because there was filth underneath the paint, would that get reported as a deficient condition;

that is, the applicant was wrong for having painted the wall in the first place, and wrong for not having had a QC inspector detect the condition of the wall and write proper documentation? Or would it be reported, everything is okay, the documentation is proper?

MR. MC CRACKEN: I think neither. What we say in here is the allegation is substantiated, and that it is acceptable because it has been reworked. We didn't try to determine when it should have been reworked. Our determination was, are the coatings applied now acceptable or not?

MR. NOONAN: Off the record.

(Discussion off the record.)

MR. ROISMAN: So really, in addition to the other things you have told me about, about the scope of your responsibility on the SSER, if a problem that had existed in the past was, by the time you got to the plant properly repaired; that is, the physical paint was now in its proper condition, you did not go back to find out whether it had been found deficient at the wrong time, whether there had been an attempt to cover up the fact that it was deficient by improper paper or anything like that, you just looked at the paint on the wall, today, and said, that wall is fine, and we're not going to bother about how it got to be fine. Is that correct?

MR. MC CRACKEN: No, it is not correct. We did a global review in the area of paints and coatings. We did that over seven categories that we determined represented what it takes to apply coatings in a power plant. In that review of the seven categories, we went well beyond any of the individual allegations we had to make an overall determination. If we had an allegation that something was wrong, we did not walk down to the area where it was, examine the coatings and see if today it was okay and simply write it off saying the allegation had no merit.

We reviewed the allegation, as we did in this specific case, where we concluded that in fact the allegation was substantiated. However, they had now reworked the coating and therefore that area was now acceptable, and proper documentation existed to show that the area was currently acceptable.

MR. ROISMAN: But the alleger apparently only says to you, they painted over a filthy area. You start with the allegation that there's a place where paint has been put over filth and that's not a proper way to paint, but inherent in that is some other things that the alleger doesn't say in their allegation. One is that, the obvious one, they painted over something they shouldn't have painted over, but there's also the inherent allegation that some QC inspector who was supposed to be there when paint

was applied either was not there, was there and didn't know that it appeared that he painted over the filth, or was there and knew that it appeared and for some reason didn't write it up in the inspection report right then. All those are apparent with the alleger's allegation, but apparently not articulated by them. Did you make an attempt to find out which one of those or other conditions actually existed?

MR. MC CRACKEN: We did not make an attempt to find out which of those would have been the cause of that specific instance. Because we conducted a global review which went well beyond the individual allegations, we considered that type of thing in the type of review we did.

MR. ROISMAN: But in terms of providing, if you will, data points for someone who is going to look at the generic QA/QC implications, the paint coatings, this might have been a data point that would be illustrative of one of those three or some other technical reason for the existence of paint over an area that should not have been painted, and your group would not have been able to provide -- your group did not provide that data point; is that correct?

MR. MC CRACKEN: Our group provided an overall assessment of the coatings' quality to the QA/QC group. The specific examples that we had in each of the seven categories were available for them to use in their overall

evaluation of QA/QC.

MR. ROISMAN: But to the extent in AQO 57 that you did not, if you did not, find out whether the reason that this paint was left -- was put on this wall in the first place was a poorly trained inspector, a nonexistent inspector or an inspector who for some reason saw and didn't write up the condition, the failure to do that -- am I correct? -- means that for the QA/QC people, they don't know which, if any, of those categories it might have fallen into in order to determine how many instances existed of inspectors seeing problems and not writing them up. Is that correct?

MR. MC CRACKEN: No, I don't think so.

MR. ROISMAN: Why not?

MR. MC CRACKEN: I think because of the fact that we conducted a global review and that we drew the overall QA/QC conclusions in coatings by ourselves, that the overall results that we provided to QA/QC gave them sufficient indication that they could make a determination as to whether it was an isolated problem within coatings, which as a consequence of appendix L would have no safety significance, or if this simply added additional information to their overall review in all the other areas they looked at of QA/QC. I don't think a specific number of one or two instances plus or minus would have had any

significant impact on what was going on in QA/QC.

MR. ROISMAN: Well, I assume that the number one or two, you are probably right about. But we can only talk about them one at a time and none of us want to stay for the rest of the day and go through all of the allegations in the paint coatings area to see how many others by using the global review you stopped your investigation and did not answer the question, why did this dirty wall get painted in the first place, and that would be foolish.

My point is to make sure I understand that it is your judgment that you had enough data points to reach your global conclusions and to say that these -- to the extent that you made those conclusions, these were plant-wide failures in the paint coatings area, not isolated areas that didn't add up to enough to make me be able to say they are plant wide.

MR. MC CRACKEN: I believe that's what I said yesterday. Let's take about a 10-minute break, please.

(Recess.)

MR. NOONAN: Let's go back on the record.

MR. CHANDLER: Before we resume Mr. Roisman's questioning, I have a concern. I think we're here at about halfway through the morning on the second day. Staff is somewhat concerned in light of the agreement that we provided to make available for your questioning, the

appropriate individuals over a two-day period, how we stand as far as completion within that time frame.

MR. ROISMAN: Well, I have -- the only questions I have left for Mr. McCracken are the two he was going to look at during the break. Then Ms. Garde is going to deal with the SSERs 8 and 10, and then I will deal with SSER 11, and then we'll come back to Mr. Noonan. My best guess is that we will not finish all of that by 5:00 today. But as I indicated to you yesterday, some of the questions that we want to ask we can't ask anyway.

For instance, we can't ask any of these people to compare the drafts of their SSERs with the finals because we don't have the drafts yet; and some of the -- until we see the documents that are being produced under FOIA we can't tell what additional questions they might require. The answers that we have gotten so far would suggest that they should be self-contained. They won't themselves generate questions other than the kinds of questions you would ask in the hearing itself, but until we have a chance to look through the documents I can't tell that. So almost certainly we will want a second opportunity to go through with people what they had said in their drafts and what they said in the final if we find differences.

I remember yesterday Mr. Calvo indicated in his

area we won't find that difference at all on that one section of the conclusions. I don't know how true that will be for the others until we see the drafts.

MR. CHANDLER: I expect you and I will discuss then any further arrangements.

MR. ROISMAN: Absolutely. At 5:00 today we will stop. Mr. Livermore indicated that he and other people had travel plans that were contingent on that, and we do also, so we will be done at 5:00.

MR. NOONAN: Let's go ahead and proceed then with the questions.

MR. MC CRACKEN: Before we proceed, I was approached during the break by Herb Livermore and he thought I might have given a misimpression. The only thing I gave to Herb Livermore to look at was my SSER 9. As long as you understood that; he thought I might have given the impression that I gave him other things in addition to this.

MR. ROISMAN: In other words, you did not give him the underlying documents besides the SSER?

MR. MC CRACKEN: Right. They were available if he chose to use them, but I didn't give them to him.

MR. ROISMAN: I hope if he wanted them he got them from the FOIA office faster than we have.

MR. CHANDLER: Touche.

MR. ROISMAN: Mr. McCracken, we had two

questions left. One was the extent to which after you looked over this you felt that there were areas of paint coating deficiencies that you found that were no more severe than what you would have expected in any nuclear plant and whether there were such and which ones they were.

MR. MC CRACKEN: I think I should make it clear that the depth of the investigation we conducted at Comanche Peak is more extensive than we have done at any other plant. Therefore, it would not be, I don't think, reasonable to make a comparison as to what this is versus another plant.

In looking back through each of the categories, as I said, I don't think I found any areas where there were not some deficiencies. The only area that seemed that it might not be too bad was the area under 5-A, which was inspection reports in the post-1981 era. Once the initial concern with coatings had been identified, when we went to the inspection reports we found they did pretty much show a pretty good paper trail of what was done and why it was done.

MR. ROISMAN: After 1981?

MR. MC CRACKEN: Yes.

MR. ROISMAN: Other than that there were no areas that you found that were really, in your judgment, adequate or appropriate in the paint coatings area?

MR. MC CRACKEN: We found deficiencies in all the areas.

MR. ROISMAN: My second question related to a statement that appeared on page M-43, and then there was some other paragraphs that you were going to take a look at in order to answer those questions. In particular, what I was interested in was the use of the words "may" -- the first question was the "may" -- and "believes," those two words that appeared in that paragraph number 2 on page M-43, was that an indication that it was not based upon specific facts that were known, but rather on assumptions that were made? Let's just start with that.

MR. MC CRACKEN: It was based on, if you go back and read the entire item starting on page M-40, which is number 8, it goes through a rather lengthy explanation covering through page M-41 of what actually led to that conclusion. The reason it said "may" is -- we list near the very bottom of M-42, the second paragraph, "Because of the three mitigating factors," and three mitigating factors discussed above is 1, 2 and 3, which basically say that some of the specification readings were too low, which doesn't give a great deal of concern because that is not going to affect adherence; that a lot of it had been reworked and examined through the backfit test program and some of the areas that were identified -- in fact, most

that we could determine were included in a coatings exempt log, which was the proper thing to do; and also that the alleger stated that he thought these were only small areas. We said "may" because he in fact said this and we, again, were relying on his memory.

MR. ROISMAN: Then in the next sentence you say "Since the TRT believes believes that the area which was not reworked due to coating thickness out of tolerance is small," that's the same -- the "belief" and the "may" come from that same source then?

MR. MC CRACKEN: Yes.

MR. ROISMAN: Did you make any attempt in this instance to determine whether in fact the practice was broader than the scope of the areas in which the alleger was identifying?

MR. MC CRACKEN: Yes, I think that's clear, because if you look at item 2 on page M-41, we're discussing in there specifically the coatings and exempt log, what was done there, the amount of steel that was reworked. All of the investigation we did into the coatings exempt log was an investigation that we conducted independently of allegations. There were no allegations in that area.

MR. ROISMAN: Here again, as I understand it -- correct me if I'm wrong -- because the backfitting program

appeared to be dealing with the issue to some extent -- you were not attempting to go back before the backfitting program to locate the technical reasons that there had to be a backfit program at all; is that correct?

MR. MC CRACKEN: We had read the reports that led up to the initiation of the backfit test program so we were aware of why it was initiated.

MR. ROISMAN: You were aware of why the report said it was initiated. You relied on the report rather than an independent evaluation of your own? That's my only question.

MR. MC CRACKEN: Part of our review included a review of documents that existed prior to 1981. We did not ignore documentation pre-1981. We looked at NCRs and IRs and so on back in that area. We looked at the procedures from review zero to the time we were at the site.

MR. ROISMAN: Still back on page M-43, you indicated that as to AQO-37-C -- and this is another one of the ones TRT could not draw a conclusion as to forging or falsification. Why don't you tell me what you meant by "could not draw a conclusion"?

MR. MC CRACKEN: I think if you go back to the write-up on 37-C --

MR. ROISMAN: On page M-38.

MR. MC CRACKEN: -- it discusses the backfit

test program on page M-38, and under the underlined section, "backfit test program documentation," we described that we in fact did look at -- down towards two-thirds through that paragraph -- approximately 250 inspection reports that were legally randomly selected. Of this sample, the TRT found two inspection reports which indicated problems with the coating mix date, which were the examples I was discussing just before we took the break. Those were the only two instances of deficiencies we found; and we state in there that the TRT could draw no conclusion as to the falsification of forging the records based on what we had looked at.

MR. ROISMAN: Now, I know we have been over this area, but I'm still having trouble understanding how you functioned. It appears in this instance you were attempting to gather data to see if you could determine whether data had or had not been falsified. You were neither relying on whatever prior work may have been done by OI, if any had been done, nor were you simply referring it to OI and leaving it to OI to find out. You actually were trying yourselves to get some information on that; is that correct?

MR. MC CRACKEN: I think what we were doing is consistent with the statement that Tom Ippolito made a little while ago, that during that time frame, if we had

found documentation which had indicated it had been forged or falsified we would then have turned it over to OI. Because we did not do so, we could not draw that conclusion and turn it over to OI in this specific instance.

MR. ROISMAN: So that when you had an allegation from someone that said the documents were being falsified or someone would be pressured not to do the right thing, you did, in effect, act somewhat in the role of an investigator to see what evidence you could find, knowing that whatever you found, you wouldn't be the one to draw the conclusions from the evidence; is that correct?

MR. MC CRACKEN: We would examine the evidence to see if there was any technical supporting documentation that would show that something was technically incorrect.

MR. ROISMAN: Let's take this one: The one on M-38, which is AQO-37-C. You did find in this lawyer's random sample, two inspection reports for which the coating mix date and the application date were inconsistent. I take it one explanation of that is that someone innocently wrote the wrong date down, and another explanation of that is that someone deliberately created documentation after the fact or at the wrong time. How did you know which of those it was?

MR. ROISMAN: We had reviewed, if you recall, two-thirds down through the paragraph, a total of 250

documents. Of those, we only found inconsistencies in two. That's less than a 1-percent error.

MR. ROISMAN: Out of a non-random sample? In other words, a scientifically inappropriate sampling was taken so that that 1 percent error is a meaningless number, isn't it? Now talking as scientists, not as lawyers, finding 1 percent out of a nonscientifically valid sample doesn't tell you anything about what the number of violations might be in the total population, does it?

MR. MC CRACKEN: The sample was a sampling where the individuals went in and simply took samplings in various locations. They did not try to do a statistical analysis. If there was a widespread difficulty, then we certainly should have seen more than two out of 250.

MR. ROISMAN: If the widespread difficulty were that only one QC inspector was falsifying, your method might have missed all of them, mightn't it?

MR. MC CRACKEN: Our method, considering that we only found two, could easily have found none.

MR. ROISMAN: Exactly. I'm trying to find out what it was about the approach that you took that could give you any confidence to say that there was what you said here, that there was not evidence of wrongdoing.

MR. MC CRACKEN: The approach that we took was consistent with the approach that we took throughout the

entire technical review team investigation in coatings. The amount of sampling we looked at in this particular case was actually greater on a legally random sample than in most other cases. In all the other cases or most of the other cases, we drew conclusions that there were deficiencies based on what we found over that small legally random sample. The fact that in this case we took a relatively larger legally random sample and didn't find anything indicates that it is probably a reasonable conclusion.

MR. ROISMAN: I understand your position.

That's all the questions that I have for you, at least until and unless I see the drafts of the SSER and feel like I would like to talk to you some more. Thank you very much. You have been very helpful.

MR. CHANDLER: Mr. Roisman, yesterday there was at least one question regarding, I believe it was SSER number 7 in which the individual at that time was not available. Mr. Keimig. Mr. Keimig is available today, and before proceeding on to the next, at your choice, if you wish to pursue that --

MR. ROISMAN: That's what I wanted to do.

(Discussion off the record.)

MR. KEIMIG: I'm Rick Keimig, chief of the safeguard section in NRC region 1.

MR. ROISMAN: As you may know, you became a famous, almost mythical figure here yesterday, Mr. Calvo having passed on to you almost every difficult question that he did not want to answer. We're going to have a long session here.

As I understand it, Mr. Keimig, you were responsible for the portion of SSER number 7 that dealt with the test program; is that correct?

MR. KEIMIG: That's correct.

MR. ROISMAN: And the portion of that that I particularly was interested in and wanted to discuss with you is the allegation number 6 dealing with management attitude. Can you just describe to me the techniques that you used to make your evaluation with respect to the management attitude issue?

MR. KEIMIG: Okay. Actually, the allegation was somewhat general in that we had to determine what may have caused the alleger to make that allegation. The only basis, after going through the particular alleger's allegations, was that the TUEC startup group did not require craft personnel to be qualified to answer the ANSI 45.2.6. In reviewing other allegations, we determined that that was not a problem. We then decided that what we should do is to take a look at some of the other program documentation and the way the procedures were carried out to determine if

possibly there was some indication there of any other bases for making that allegation.

So essentially what we did was we reviewed the final safety analysis report, chapter 14, and the reg guides to which the applicant had committed, along with their administrative procedures, and other program documents, as well as the actual test procedures and test results that we had looked at for other allegations, and used that as a basis for our determination or our assessment.

MR. ROISMAN: Now, you had -- as you articulate the allegation on page J-12 of the report, the allegation was that "Startup management had tendency to relax standards whenever interpretation of commitments or NRC requirements allowed instead of taking a conservative approach in the interest of public health and safety." What is your view as to whether or not if that were true it would be improper?

MR. KEIMIG: Well, I would think that if the applicant's commitments permitted and that the NRC regulations permitted, certain things could be less than conservative, and that that certainly would not be a problem, provided that there were control measures in place to prevent the problems from occurring.

MR. ROISMAN: All right, and would it matter in

your judgment whether the motivation for looking for the least conservative acceptable interpretation of the regulation or the reg guide, what have you, were scheduling or cost pressures? Does that matter in terms of your evaluation of whether this would be wrongdoing or not? Be inappropriate?

MR. KEIMIG: I guess I don't understand the question.

MR. ROISMAN: Well, you say on page J-97, in discussing this particular allegation in more detail, at the end of the page, the last paragraph, first line, "The TRT found, however, that some of the decisions made by start up management may have appeared to be less than conservative. Through discussions with startup management personnel, the TRT perceived this to be due to the heavy work load and schedule pressures inherent in a testing program of such magnitude.

"These burdens apparently resulted in decisions by startup management in the interests of expediency to delay some parts of a particular test to a later date when the work load impact on schedules would be lessened," and then you go on.

My question is, I can't tell from that whether you feel that that was okay, and appropriate, or whether you thought that that was questionable or whether you

thought that was not right. That's what I'm asking you.

MR. KEIMIG: I understand. I believe that that is appropriate, provided, as I said before, there are control measures in place that would prevent problems from occurring due to that in the future or down the road.

MR. ROISMAN: Control measures to prevent them from doing that kind of shortcutting in the future or control measures to complete the work that they didn't do the first time?

MR. KEIMIG: Control measures to insure that they complete the work that wasn't done the first time.

MR. ROISMAN: Let's talk about the containment -- I won't get the name right if I don't read it. What was your allegation category number 3?

MR. KEIMIG: Containment integrated read rate testing.

MR. ROISMAN: As I understand the problem when you were looking at that related back to an allegation made in a case contention at an earlier time in this hearing; that is, when a containment integrated leak rate test was performed it was performed with three leaks in the control room in the containment building, and in order to make the test work properly -- the leaks were there; they would eventually have to be sealed up -- they isolated that area to test the rest of the building and intended to come back

at a later date and just test for those three places where the leaks were after they had fixed them. Is that in summary, what you were looking at?

MR. KEIMIG: I guess the allegation as it appeared in the contention was that there were -- the number of leaks in the containment during the containment integrated leak rate test were of such magnitude that the tests would have to be redone. That's the allegation that we were looking at.

What we found in looking at that allegation was that there were three attempts to conduct the leak rate testing. On the third attempt, prior to the third attempt, all the leaks but three were found and corrected. There were three in the electrical penetrations that they didn't know what the problem was, why it could not be corrected. So those three penetrations were isolated. We wanted to conduct a third attempt at the test.

MR. ROISMAN: As I understand it, they should have advised the Nuclear Regulatory Commission that that is what they were going to do and they did not. Is that correct?

MR. KEIMIG: That's correct.

MR. ROISMAN: As I understand it, they did eventually run the tests for those three penetrations and the three penetrations passed the tests; is that correct?

MR. KEIMIG: That is also correct.

MR. ROISMAN: That they did not ever run the whole containment leak penetration test with those penetrations filled and closed off; is that correct?

MR. KEIMIG: With those three penetrations as part of the integrated test, no, they did not.

MR. ROISMAN: And in your judgment, if they had told the NRC about it, that would have been all right to do, but not necessarily what you would like to have seen, but it would have met the regulatory requirements.

MR. KEIMIG: I am personally not an expert on containment in integrated leak rate testing. I would have had to refer that decision to the appropriate branch in NRR.

MR. ROISMAN: Did you do that?

MR. KEIMIG: Yes.

MR. ROISMAN: What did they tell you?

MR. KEIMIG: I believe the issue has been resolved at this point this time.

MR. ROISMAN: Did they tell you whether the original conduct was proper or improper, putting aside for the moment the question of telling the NRC?

MR. KEIMIG: As I recall, it was stated that it was not the most desirable way of conducting a preoperational integrated leak rate test but that it was acceptable on a case basis.

MR. ROISMAN: Now, did you consider that that activity, the way in which the applicant actually dealt with the containment integrated leak rate test was evidence to support the allegation made in allegation number 6, in the testing area?

MR. KEIMIG: Yes. It was a less than totally conservative way of conducting the test.

MR. ROISMAN: What effort did you make to see how many other of the tests were run at the line, right at the limit, in the least conservative but nonetheless regulatorily acceptable way?

MR. KEIMIG: We looked at, I believe it was 17 out of 25 hot functional tests -- a hot functional test is also a free operational test -- and we found some minor problems in those. However, we did not look programmatically at the entire preoperational test program.

MR. ROISMAN: How did you decide which tests you would look at?

MR. KEIMIG: That was generally pointed to by the allegations.

MR. ROISMAN: Did you make any attempt to -- looking again back at the allegation number 6 -- to attempt, using your expertise and those of other people you could call on, to decide which tests, if you were being overly sensitive to scheduling and costs, which tests would be

most likely to be the ones where you would try to cut corners and then check those tests? Was any attempt made to do that?

MR. KEIMIG: No, and the reason that we didn't was because the preoperational testing program would be reviewed by other inspectors from the NRC.

MR. ROISMAN: So that in a sense, whether or not the applicant was extensively, occasionally or only once making less than conservative decisions as a result of scheduling or cost pressures, was a question which would be answerable only after work was done that was not being done by the TRT but would be done in the future by other people at the NRC?

MR. KEIMIG: I believe that is a fair assessment. It would entail the entire preoperational test program and any other things that the inspectors would find in following up on that.

MR. ROISMAN: So in effect, I guess, then you would say that as to allegation number 6 at least, it remains an open item subject to subsequent looking at by NRC inspectors?

MR. KEIMIG: Yes. Certainly, our review -- although we did look at many procedures, I don't think that we could state based on that that everything was 100 percent.

MR. ROISMAN: Now, in the conclusion section on page J-98, under paragraph 5, you have the statement that "TRT found no substantive reason to believe that TUEC startup management has a tendency to liberally interpret FSAR commitments and NRC regulatory guides in the area of testing." What did you mean by "no substantive reason to believe"? What does that intend to convey?

MR. KEIMIG: By that, we intended to convey that we found no basis for a trend in that direction from what we had reviewed.

MR. ROISMAN: And what you had reviewed was, in addition to the containment integrated leak rate test, the other places where you might have found that trend would have been in those 17 hot functional tests that you reviewed as well?

MR. KEIMIG: Yes, and we also did review some prerequisite tests during our review.

MR. ROISMAN: At the end of paragraph 5 you make the statement, "The alleger was unavailable to discuss the TRT's findings and conclusions." What did you mean by "unavailable"?

MR. KEIMIG: I would like to defer that question to Mr. Noonan.

MR. NOONAN: I'll give you the general thing. Where those types of words appear in the SSER, what we did,

we went back to see if we could find the alleger. If we couldn't, we sent them letters, and in all cases there was return receipts; the man was not available, or he might have refused us, might have said I don't want to talk to you.

MR. ROISMAN: You could have reached him and he said no or you couldn't reach him?

MR. NOONAN: Yes, but it will state it in here.

MR. WESSMAN: More than likely when they are a confidential source, the individual did not give us his name and we may have received the allegation with no name tied to it, so there was no way to contact the individual. We had several allegations of that nature.

MS. VIETTI-COOK: I have that "Feedback was refused by the alleger on January 7, 1985."

MR. ROISMAN: Okay.

Let's go back to the -- at one point in the conclusion section on J-98, you indicate -- let's strike that. I want to ask you something else first.

As I understand it, you found two examples in your look, your non-scientifically sound but nonetheless random look, at tests, where the applicants chose the less conservative course of action. One was the containment integrated leak rate test that we talked about, and the other was related to the hot functional test discussed in

the test program category 1 and referenced in the paragraph just above paragraph 5 on page J-98. Now, which was the reason that you made the conclusion that no substantive reason existed to support this allegation? Was it that there were only two examples out of the ones that you looked at or was it that there was something about the examples that made them not illustrative of the point the alleger was making?

MR. KEIMIG: I think both.

MR. ROISMAN: In what way did they fail to be illustrative of the point that the alleger was making?

MR. KEIMIG: In that they did not establish a trend for being less conservative.

MR. ROISMAN: But they were each one of them examples of being less conservative. It wasn't that those didn't turn out in your judgment to be examples that did not substantiate the claim that they were less conservative.

MR. KEIMIG: That's correct.

MR. ROISMAN: How many would you have needed to have felt there was a trend?

MR. KEIMIG: We would have had to look at who was responsible for them and the nature of the less than conservatisms that we found.

MR. ROISMAN: Did do you that

MR. KEIMIG: Yes, we did.

MR. ROISMAN: What did you find?

MR. KEIMIG: Found there was no substantive reason to believe that they were being less than conservative.

MR. ROISMAN: You found they had another motive for what they did than trying to be less than conservative.

MR. KEIMIG: There may have been that appearance of being less than conservative on the part of the alleger.

MR. ROISMAN: Wait. I thought you told me that they were in fact less than conservative.

MR. KEIMIG: On page J-97, in the first sentence of the last paragraph on the page, "The TRT found, however, that some of the decisions made by startup management may have appeared to be less than conservative." By that, we meant may have appeared to the alleger to have been less than conservative.

MR. ROISMAN: What did you understand it meant -- well, let's look at J-98 a second. In the middle of the page, the second paragraph, referring now to the hot functional tests, you say, "These decisions were apparently made because of schedule considerations, and while not the most conservative course of action, nonetheless were acceptable from the point of plant safety." Now, are you meaning to convey something different with "not the most conservative course of action" than you would by the phrase

"less than conservative"?

MR. KEIMIG: Possibly that was a poor choice of words.

MR. ROISMAN: Which one?

MR. KEIMIG: In that sentence you just read. "Not the most conservative course of action." I personally would not have done it the way it was done.

MR. ROISMAN: Would not have done the tests the way it was done?

MR. KEIMIG: That's correct.

MR. ROISMAN: Well, would you ever use the phrase "less than conservative," if it was within the regulatory requirement?

MR. KEIMIG: Yes.

MR. ROISMAN: You would?

MR. KEIMIG: Yes, sir.

MR. ROISMAN: Was the way in which the containment integrated leak rate test was done or the hot functional test, were either of those the most conservative way in which they could have been done?

MR. KEIMIG: I guess I don't understand that question.

MR. ROISMAN: Well, let's take the leak rate test. Would you agree that the most conservative thing the applicant could have done was to wait until the electrical

penetration problem had been found and solved and then run for the entire containment, a containment integrated leak rate test that proved that the containment met the test, that that would have been the most conservative thing they could have done?

MR. KEIMIG: Yes, I agree.

MR. ROISMAN: And that they did something less than the most conservative because they didn't do that?

MR. KEIMIG: That's correct.

MR. ROISMAN: Is there some sort of middle ground of what is still conservative, and is there then a least conservative that is still within the scope of the regulation? Is that a proper way to rank this containment integrated leak rate test for conservativism?

MR. KEIMIG: I don't know that we're in the business of ranking tests in order of conservatism.

MR. ROISMAN: You understand, I didn't introduce that word in here. I'm looking at the SSER.

MR. KEIMIG: I've already stated that that may have been a poor choice.

MR. ROISMAN: But you use "conservative" and "less than conservative" in other places, so I'm trying to get an understanding of how you mean to use the term so I know what you mean by these words.

MR. KEIMIG: The test met the NRC regulations

for a containment integrated leak rate test as determined by the appropriate licensing branch in NRR. I did not make that determination. That problem when we identified it was immediately turned over to the proper branch in NRR.

MR. ROISMAN: Do decide whether the leak rate test had been done properly at all?

MR. KEIMIG: Well, I would assume that that would be part of it, yes.

MR. ROISMAN: Are you saying that it was that branch that came back to you and said whether this was conservative or not conservative, to do the test the way it was done? Was it their evaluation and not yours on that subject?

MR. KEIMIG: They found that the way the test was done met the NRC regulations for conducting that test.

MR. ROISMAN: Was that the end of their part of the input?

MR. KEIMIG: Yes.

MR. ROISMAN: Who had to decide whether that way was conservative or not conservative, you?

MR. KEIMIG: I made that judgment.

MR. ROISMAN: So we're back to you trying to explain to me -- we now know what the most conservative thing would have been on the leak rate test, and that didn't get done. Is there anything they could have done on

the leak rate test that would have met the regulations and been less conservative than what they did do?

MR. KEIMIG: As I said before, I am not a containment integrated leak rate specialist. I can't answer that question.

MR. ROISMAN: Well, what was your basis for answering the question that it only appeared that what they did was less than conservative but that in your judgment it did not in fact turn out to be less than conservative?

MR. KEIMIG: If you would give me a specific problem with the leak rate test, then I could answer your question.

MR. ROISMAN: The specific problem is it was never run with the entire containment at one time, properly. That's the problem. The regulation in its most conservative interpretation would require you to isolate the entire containment, reproduce the conditions as they would actually exist during plant operation and verify that the containment didn't leak. That didn't get done.

MR. KEIMIG: However, an acceptable alternative method was implemented by the applicant.

MR. ROISMAN: One which was less conservative than the primary method?

MR. KEIMIG: That's correct.

MR. ROISMAN: But not so less conservative that

you would call it less than conservative?

MR. KEIMIG: Not so less than conservative that it didn't meet the NRC regulations.

MR. ROISMAN: Is that the only kind of problem that would have caused you to say there was substantive reason to believe that TUEC startup management has a tendency to liberally interpret in the area of testing, is that if they actually had run the test in the way that didn't meet the requirements of the NRC?

MR. KEIMIG: Again, I don't understand the question.

MR. ROISMAN: You have a statement that says "The TRT found no substantive reason to believe that TUEC startup management," et cetera, at the beginning of the conclusion section. I'm saying is the only way you would have been able to say that you did find a substantive reason to believe, et cetera, is if you had found that they had run a test and the test did not meet the requirements of the NRC?

MR. KEIMIG: FSAR and the guide are not regulations. If an applicant decides that he wants to do something else, he can go to NRC with an alternate method of meeting that regulatory guide or propose to change in the commitment in the FSAR. But there is nothing wrong with doing that.

MR. ROISMAN: But they did not do that in this case on the leak rate test; correct?

MR. KEIMIG: In this particular case, it was not done.

MR. ROISMAN: Okay, thank you.

Ms. Garde has asked me to make clear that we had been unable to identify certain documents referred to in the paint coatings testimony. On the digest of the documents that we got from the PDR -- and as I understand, maybe it is a FOIA problem, not necessarily a problem for the people here, but I want to get it on the record. Changed contract for Brookhaven, that is the contract that altered their arrangement from region 4 to the TRT, the Brookhaven signature packages for appendices L and M, and the drafts of appendix M. Now, it may be that they are labeled some other way and we just don't realize it in looking at the index, but on the index nothing looks automatically like any of those things. And we have been through the documents and didn't see them.

MR. CHANDLER: I will look into it and get back to you as to how they are identified on the indices and if they are identified on the indices.

MR. NOONAN: We will look at that but the signature packages should be part of that document, that information. You might not see -- it might just look like

Staff signature packages. You might not see something that says EGG on it.

MR. CHANDLER: I assume it would say Battelle --

MR. NOONAN: It might not say "Brookhaven."

MS. GARDE: If you point me to them, I would appreciate that.

MS. GARDE: For the record, could you please both identify yourself and the area of responsibility that you had in, I believe, both SSERs?

MR. SHAO: Okay. I'm Larry Shao. I'm the TRT civil structural and mechanical piping group leader. I'm responsible for SSER number 9 in the area of civil structures and SSER number 10 in the area of mechanical piping issues.

MS. GARDE: I'll start with SSER number 10, mechanical piping. Mr. Shao, were you part of the original TRT team that went down on July 9, 1984?

MR. SHAO: Yes.

MS. GARDE: Were the guideances that we've had in the record and discussed -- the technical review team guideances -- the document that governed your initial work?

MR. SHAO: Yes.

MS. GARDE: Could you please turn to page N-5? In the last paragraph of the page, "communications with TUEC," the first sentence in that paragraph says "Whenever

TRT reviewers encountered problems during their evaluations, the TRT project director and/or his designee would resolve them through discussions with TUEC management on-site." Could you please describe what type of problems would have been discussed during the evaluations that you were working on?

MR. SHAO: Mainly a lot of problems had to do with clarifying the issues. I would say it is mainly a lot of problems related to clarification issues, certain information we cannot find; or find an issue before it becomes an open issue. We asked a lot of questions saying, where are the documents to back up this or where is the analysis that shows these are there. This kind of problem.

MS. GARDE: When you say clarify issues and then use the term "before they became an open issue" -- so at the time that you went down there you had allegations?

MR. SHAO: Right.

MS. GARDE: But that allegation was then transformed into an open issue?

MR. SHAO: We looked at -- actually my group is responsible for about five allegations, so we looked at -- we had about 17 people. We looked at different issues and tried to find whether each allegation can be substantiated or not. If it can, we try to look at the documents. If we cannot find the documents, then we go to the utility and

say: These documents cannot be found. Can you find them for us? Or an analysis we cannot find: Can you find it for us.

MS. GARDE: I'm a little unclear from your description, and maybe the answer is both, whether you would go to TUEC when you were still trying to characterize the allegation or whether you would go to TUEC after you characterized the allegation in pursuit of documentation.

MR. SHAO: In both cases.

MS. GARDE: Could you give me an example of when you would go to TUEC to assist you in characterizing an allegation?

MR. SHAO: In some cases, let's say, characterization is talking to integral people, and then finding out the background.

MS. GARDE: Okay, I understand that to be your investigation or your inspection of that item. What I'm concerned about understanding is whether or not you have a raw allegation that needs to be fleshed out in order for you to work with it. Did you turn to TUEC to help you flesh out those allegations?

MR. SHAO: No. Maybe to characterize the allegation, mainly we tried to find out through the alleger and documents. But say that the document may not be clear, maybe the document is written by the TUEC people. We talk

to them to try to understand the documents better. That way --

MS. GARDE: Could you give me an example? I think that might be more helpful.

MR. SHAO: Okay, for instance, on control room ceilings, okay, we want to find out what the damage group did. What the damage group did is they want to show how the so-called degree with reg I-29, if it falls, how it falls, how that affects it, so we went to TUEC to ask them how do they perform a damage study.

MS. GARDE: That was really -- when you say problems -- encountered problems during your evaluations, you're referring to during your inspection process?

MR. SHAO: Yes.

MS. GARDE: Were any allegations put to rest based solely on verbal explanations provided by TUEC?

MR. SHAO: They were never put to rest based solely on their conversation. After they talked, what my people usually do is look at similar information, look at the documents to confirm what they said.

MS. GARDE: Were the conversations with TUEC documented in some manner? Were there notes?

MR. SHAO: In some cases, yes. In some cases, maybe not that good. I don't know. Mostly we tried to document it as much as we can.

MS. GARDE: Let me just make a note for the record. The documents -- I believe most if not all of the documents relating to these SSERs have been released --

MR. SHAO: Yes.

MS. GARDE: Or at least a great part of them, and I didn't see any of these types of documents besides the ones I looked at. I'll go back and look some more.

Okay, could you --

MR. SHAO: He told me some have not been documented and some have been documented.

MS. GARDE: And in the course of doing your work, when you found it necessary to talk to TUEC or their representatives, was there a particular protocol that you followed? Did you go to one person on-site for civil structural or did you have to go to Mr. Ippolito and he would go to the site member?

MR. IPPOLITO: Let me handle that. As part of our protocol for interfacing with TETRO, we agreed we would have an assigned so-called technical person in these five areas, that my team leaders could go directly to to get whatever drawings they want to be taken to exactly the right location, if they want to find a pipe support or whatever have you, so that we can -- it would be logistically an improvement for us to get the information or get to the place we needed to get to our job and

Mr. Shao, each of his structural and mechanical groups had a person assigned at our beck and call to provide information or to provide those services, rather.

MS. GARDE: Is that consistent with what Mr. Ippolito has represented?

MR. SHAO: Yes.

MS. GARDE: Did you have a specific individual you worked through?

MR. SHAO: Yes.

MS. GARDE: Who was that?

MR. SHAO: Claude Moehlman, M-o-e-h-l-m-a-n, and Randy Heeten, H-e-e-t-e-n.

MS. GARDE: I have a document that might be the list that Mr. Ippolito is talking about. Let me show it to you.

MR. CHANDLER: If you read the title of the document, that way we'll know what it is.

MR. SHAO: NRC technical review team, TUGCO. Yes, the civil, mechanical is there and Randy Heeten worked on that.

MS. GARDE: Was this protocol followed in your -- among your team?

MR. SHAO: Yes.

MS. GARDE: Was it followed pretty strictly?

MR. SHAO: Yes.

MS. GARDE: Does that mean you are the person that went to TUEC management with questions?

MR. SHAO: When we want to see a lot of the documents we want to have a meeting or anything or audit, we always go to him.

MS. GARDE: That was you that was making the contact?

MR. SHAO: Also I have 17 people working for me on the site, so two separate leaders, one mechanical and --

MS. GARDE: Who is mechanical?

MR. SHAO: That's Dr. Hou, and the civil was Mr. Jeng, J-e-n-g, H-o-u.

MS. GARDE: So I should be able to, as a general rule, determine by reading the SSER and/or by going through the documents provided that were developed, determine when you talked to TUEC and about what subjects?

MR. SHAO: I guess so, yes.

(Discussion off the record.)

MS. GARDE: Could you please turn to page N-7? Now, in the first paragraph, there's a very long sentence which discusses the types of concerns that the mechanical and piping division subteam was looking at; is that correct?

MR. SHAO: That's correct.

MS. GARDE: Now, the second line of that paragraph said that you received, the TRT received

allegations that were broad in scope. Could you please define what you mean by that "broad in scope," that's a terminology or a term of art that is often used and I'm not sure what context you are using it in this paragraph.

MR. SHAO: The allegations are mainly construction-related. It is very broad in scope because allegations are related to welding, piping, bolts, supports, so I would consider it a very wide scope.

MS. GARDE: Let me tell you what I understand you to mean and then you correct me if my understanding is not correct. When you use the term that it is "broad in scope" and you have an allegation, for example on welding, did you then consider that this allegation went across the board in welding, like on welding techniques, or in welding failures? Was it generic?

MR. SHAO: I think maybe your "broad in scope" and the "broad in scope" are a little bit different here. Here the "broad in scope" is just covering many areas, many different -- across many disciplines in the mechanical area because in the mechanical area, you have people working on piping, you have people working on welding, you have people working on bolting. Very specialized.

MS. GARDE: Welding goes on in all different areas, all different types of structures and components?

MR. SHAO: When you say "broad," sometimes when

you say "mechanical" you think of piping. People are doing piping. In this case it covered not only piping but the bolting, the welding, it covered the supports. It is very broad.

MS. GARDE: How is that different than generic?

MR. SHAO: The allegations we had are in certain areas for a specific area.

MS. GARDE: I don't understand.

MR. SHAO: You said allegation is very generic. I would say each allegation is very specific, certain area. I wouldn't call it generic. I think mostly of a generic-type allegation as mostly a QA/QC-related allegation.

MS. GARDE: I'm still a little confused and I want to make sure that I understand this term because it is used frequently in this document, and when you use the term "broad in scope" -- you have an allegation which is broad in scope -- if someone tells you that welding on a particular pipe was done incorrectly, there was a lot of undercut -- if you have a very specific allegation which dealt with poor welding and it gave a specific example of a poor welding technique, maybe even a component number, was that considered an allegation that was broad in scope?

MR. SHOU-NIEN HOU: Does not mean the allegation itself is broad in scope. It is the overall picture of the

allegations. There are so many allegations in this mechanical and piping area; they scatter all over various areas and and relate to various stages of construction and the design phases, so that's what it means, broad in scope.

MS. GARDE: You have maybe 40 -- you had a lot of allegations, several hundred, 60, 70 allegations in welding. You would consider that that was broad in scope because it covered welding from the beginning to the end of construction, all different techniques and procedures.

MR. SHOU-NIEN HOU: We talk about big picture, yes.

MS. GARDE: You agree with that?

MR. SHAO: I agree. Certain allegations are not broad in scope, but this "broad in scope," I think it covers many areas but certain allegations are not broad in scope.

MS. GARDE: Yesterday with Mr. Calvo we discussed two types of concerns, general concerns and specific concerns. Do you remember that part of the discussion?

MR. SHAO: Yes.

MS. GARDE: I see in this SSER that you also pursued both general concerns and specific concerns. Can you make any estimate of what percentage of these were specific concerns where you had detailed information on

components or specifications that made it possible for you to go back to the actual process, component, time period and recreate what actually happened and how many were just general?

MR. SHAO: Okay, actually, I have five SSER -- in number 10 there are about five open issues which cover eight open allegations. In addition to that, we have another 40 areas where we find some problems or the procedure was not followed or something didn't go right. 40 incidents, and these 40 incidents were transferred to the SSER number 11, appendix P, 40 issues, so altogether -- but that 40 also included this. Altogether I would say 40 issues, 40 things we found where we want the applicant to address the root cause and generic implications. That's in SSER number 10. SSER number 8 there are about 34 issues.

MS. GARDE: We'll come back to that. Still sticking with the first paragraph on N-7, the list of concerns includes such things as NCR process, traceability of materials, use of unqualified welders, weld quality, anchor bolt installation, disposition of NCRs and discrepancies and improper or questionable documentation practices. Now to my layperson reading of that, I see a lot of QA/QC implications in those issues. Would you agree with that?

MR. SHAO: I agree.

MS. GARDE: To what extent did your group pursue the QA/QC element of these allegations?

MR. SHAO: We look at a procedure, we look at a construction record installation and also we look at counterallegations, see if anything we find is there or not there, or if we find something wrong, we just, as I say, put these issues in the QA/QC category and the applicant will answer the question.

MS. GARDE: You just said you only sent over 40 issues.

MR. SHAO: That covered these things, yes.

MS. GARDE: Of these issues, how many allegations were covered?

MR. SHAO: I cannot answer that question, but --

MS. GARDE: An issue could cover more than one allegation; isn't that true?

MR. SHAO: Usually one issue coming from one allegation. Sometimes not even allegation. Sometimes the issue can be when we look at allegation, we find something wrong. That is an issue.

MS. GARDE: So to what extent, we'll get into this in more specific detail a little later on, but there is a lot of QA/QC comments and conclusions in this SSER. Evaluations made on something being bad QA/QC practice or there was a problem with QA/QC. And in my reading, more in

this SSER than in the other SSERs, except for number 11. I want to know to what extent -- and this is in your broad opinion as you look at how you did your work in writing the SSER and in doing your investigations and inspections -- to what extent did you pursue the QA/QC element of an allegation?

MR. SHAO: The minute we found a problem, my staff didn't pursue. We just list the problem and Ippolito had more resources than we do and if we run into it we found --

MS. GARDE: We'll come back to that with some specific examples. Later on in this paragraph, there's a comment that this report does not address new allegations recently received from the Intervenor. Are you and your team still working on those new allegations?

MR. SHAO: Yes, we do.

MS. GARDE: They will be issued in a subsequent SSER?

MR. SHAO: Yes.

MS. GARDE: That's the SSER Mr. Noonan was talking about yesterday?

MR. SHAO: We are addressing another hundred allegations --

MS. GARDE: That was my next question.

MR. SHAO: -- in both the civil, structural and

mechanical areas:

MS. GARDE: Could you now turn to page N-13? On the bottom of page N-13, paragraph 3.3, section 3.3, "findings for mechanical and piping issues." "The TRT reviewed over 400 mechanical and piping issues, including 300 concerns raised by one alleger." That 300 is part of the 400; is that correct?

MR. SHAO: Correct.

MS. GARDE: Now, right above that, approximately in the middle of the page, there's a category 49, "miscellaneous concerns of alleger A-45."

MR. SHAO: Yes.

MS. GARDE: I'm not attempting to determine any identifying information on this individual, but I am interested in knowing if the allegations that were given to you by A-45 were very specific items, very specific -- were these the ones you would describe as specific as opposed to general allegations?

MR. SHAO: They are pretty specific. Charts and drawings. The reviewer wants to talk.

MR. HUBBARD: I'm Robert Hubbard. I'm on the technical review team. The allegations that were included in category number 49 arose from the results of a meeting with him and at the time we first met with him, he had five books that he indicated had lists of drawing numbers and

similar items. At that time, he gave us 70 items from the five books to start to investigate. At a later meeting, he came back and gave us 63 items, some of which were from the list of 70 and some were new books, which he said were the 63 most important items in the books.

In the review of all but -- well, in our review of the ones from the item list of 63 we chose a 25 percent sample, and in that sample, we chose ones where there were specific locations, concerns, and as I recall, there were three or four. The balance of the items were very nonspecific. His direction to us was, here are the drawing numbers. When you see a drawing number, that means something is wrong with that drawing number. I can't tell you what it is. I don't have any suggestions on what might be wrong. And he would say, here's a traveller, something wrong with it. So they were completely nonspecific, so what we had to do was go look at the drawing traveller and identify associated drawings and see if we could find something wrong. So they were very nonspecific in the bulk of the cases.

MS. GARDE: Let me make sure I understand this: The SSER reports that there was 300 alleged defective items. Do those 300 alleged defective items reflect what was totally in the five books? Was there 300 defective items in those five books?

MR. HUBBARD: That was a subject of some question. He indicated when he gave us the books -- we finally got copies of the books -- that there were some 900 and when we went through and sorted out and collected and assembled them -- let me just check that. The final count was 280 items as we went through, and there were several that were duplicates -- or they collected.

MS. GARDE: You ultimately did get the books. You determined after you had the books that there was 300 alleged defective items?

MR. HUBBARD: 280.

MS. GARDE: Of those 280, you actually inspected a 25 percent sample of the 63 items he identified as the most important?

MR. HUBBARD: Right. Plus we had already started working on the list of 70, so there were six additional items that we had previously checked. And so we investigated 16 from the list of 63, which is close to 25 percent, and we added the six, to the total number inspected was 22.

MS. GARDE: Based on your inspection of these 22 items, you reached -- did you reach conclusions about all 280 allegations?

MR. HUBBARD: Based on the sample, yes.

MS. GARDE: What were those conclusions?

MR. HUBBARD: That we could find both on the specific and the nonspecific, we found none of the items listed had proven to be substantiated as having problems somewhere.

MS. GARDE: Now if I would have the list of those 22 items with the allegation numbers, are they all pursued in this SSER? Are each of the 22 developed in the SSER?

MR. HUBBARD: That's correct. They are all identified.

MS. GARDE: Where would I obtain the rest of the 280 allegations, the books? They are certainly not in the PDR.

MR. HUBBARD: The books were in there last time I saw them.

MS. GARDE: With where?

MR. HUBBARD: In the FOIA. There was one that got lost during the way. They are just little notebooks, the spiral kind, but at the time we put the information in the FOIA, one of them was missing. I don't know what happened to it.

(Discussion off the record.)

MR. HUBBARD: They are just little spiral things, barely legible.

MR. SHAO: By the way, there was a closing

interview with that alleger in August.

MR. HUBBARD: You will also be able to find all those documents in the other copies of the -- are you listening?

MS. GARDE: Annette is talking to me at the same time. Go ahead and finish your answer. I'm sorry.

MR. HUBBARD: In the back of the original SSER is a list of the 63 most important items. There are other references of those documents we looked at.

MS. GARDE: What page is that?

MR. HUBBARD: N-316. On the very last page.

MS. GARDE: But the list of the 280 is not in the public document anywhere?

MR. HUBBARD: No.

MS. GARDE: Thank you. That's very helpful.

MR. SHAO: I think maybe one question you didn't ask is why --

(Discussion off the record.)

MR. SHAO: Why all the issues we found are okay? Why some of the issues the alleger identified and we looked at are okay?

MR. HUBBARD: Are you asking me to answer it?

MR. SHAO: Okay.

(Discussion off the record.)

MS. GARDE: A good question was just raised by

an unbiased man of the audience about why there wasn't any findings, any substantiation of the 28, so what's the answer?

MR. HUBBARD: Well, as I recall, at the time we were talking to the alleger, he indicated he had been off-site for quite awhile and a number of the items in his book which he carried around with him over a long period of time may have been corrected and that he was not aware of it, so it was quite possible that these were not true allegations but instead were things that he had noted that he didn't know how the final result had come about.

MS. GARDE: So they would almost more appropriately be identified as concerns that he had or had been given to him, but he didn't know what the resolution of them was?

MR. HUBBARD: That's a better definition than allegation because there was nothing in specific.

MR. SHAO: He left the site for a few years and he had his original concerns which he didn't know had been worked on.

MS. GARDE: That was another thing I was going to pursue a little later on, but I think it is appropriate to pursue now. We discussed the definition of substantiation yesterday with Mr. Calvo, and I want to know if that is the same definition for you, but let me start by

asking: When you say a concern or allegation is unsubstantiated, do you mean that at the time that you go and look at that concern or allegation, like in this example a particular drawing number, that if that concern no longer exists, if at the time the NRC looks at it, it is acceptable, then the concern is not substantiated, even though at the time the concern was raised, it may have been substantiated if you had been there at that time; is that correct?

MR. HUBBARD: Would you repeat that, please? Try, if you can. There's a time factor involved. That's important.

MS. GARDE: Yes, there is.

There's a term that is used frequently, that a concern or allegation is either substantiated or unsubstantiated. My understanding of the definition of "substantiated" is that at the time the NRC inspector looks at that particular item or concern, that there is no problem; that the problem, whatever it may have been, has apparently been resolved and the component or the drawing or the weld is, as you look at it today fine, acceptable.

MR. HUBBARD: May I answer this?

MR. SHAO: Okay, maybe you could. I would consider it as nonsubstantiated, yes. That's it.

MS. GARDE: But there is -- the other part of

that question is, that when the allegation was originally identified, it may have been correct.

MR. SHAO: You are right.

MS. GARDE: But the NRC is not passing judgment on whether or not at the time period that incident occurred, that an alleger believed there was something wrong, whether or not at that time it was wrong. Do you want me to give an example? Would that be easier? Quality control inspector is on the site, starts to write up an NCR and is told not to write it. He or she sees a defective weld. He or she then goes home, writes it in her little log book. A year later, the TRT arrives, that person meets with the TRT and says, tell me everything you know of that's wrong with the site. They say, on March 12, 1983, I was told not to write an NCR on this particular weld. I knew that weld was bad. The TRT then goes out and looks at the weld and it is now fine. So they say that that allegation is not substantiated. There's no determination made whether on March 12 or 13, 1983, when that incident occurred, that the weld was in fact bad. It had to be ripped out, maybe even just last week.

MR. HUBBARD: That's true.

MS. GARDE: Is my understanding correct?

MR. SHAO: Yes. That's also the reason I asked the question. It doesn't mean the alleger was not

knowledgeable. He was knowledgeable but the problem had been fixed. That's why right now it is not substantiated.

MS. GARDE: I understand.

MR. IPPOLITO: Excuse me, Larry. It may not be appropriate to the example that Ms. Garde just mentioned, but when you go to repair a weld or remove a weld support or whatever have you, isn't there documentation that supports that change?

MR. SHAO: Yes.

MR. IPPOLITO: Therefore, if you were concerned about a specific weld or a specific support, you would get the package on that support and it should tell you from day one everything that has happened to that support?

MR. SHAO: Yes.

MR. IPPOLITO: Isn't that true?

MR. SHAO: That's true.

MS. GARDE: To pick up on Mr. Ippolito's rehabilitation --

MR. IPPOLITO: You pronounced it right. I wish you could spell it right.

MS. GARDE: Did your team members make any attempt to make a judgment on whether or not the entire process -- with the example that we're giving, the weld -- was done correctly?

MR. SHAO: We usually -- I don't think I can say

we looked at the entire process all the time but we usually -- my people look quite a lot in the related area to convince themselves this is not a problem.

MS. GARDE: In terms of whether or not other welds in the example that we're giving would be bad?

MR. SHAO: I cannot say they look at the entire process.

MS. GARDE: I want to make sure I understand what each of the team leaders mean when they say a concern is either substantiated or not substantiated.

MR. SHAO: Usually they look enough to convince themselves that there is not a problem there.

MS. GARDE: But that's to determine whether or not there is a wider problem or a generic problem coming out of that allegation; is that correct?

MR. SHAO: Right.

MS. GARDE: At the end of this paragraph on page N-13, following the not substantiated, there's a terminology which says, did not contain sufficient information with which to either substantiate or refute the concerns. Would you please explain what you mean by that term?

MR. SHAO: Okay, let me give you an example.

MS. GARDE: Okay, go ahead.

MR. SHAO: Refer to page N-69.

MS. GARDE: N-69?

MR. SHAO: Yes. AW-46.

MS. GARDE: Okay.

MR. SHAO: You read this summary. "The TRT concluded that the allegation that grounding for welding was accomplished by wrapping the grounding lead around the pipe can be neither substantiated nor refuted. No area reviewed (inspection records, field observation and welder interviews) by the TRT showed any evidence of poor grounding. If the allegation were in fact true, an N-5 inspection has the capability of detecting the arc strikes and assuring that appropriate action can be taken. Accordingly, this allegation has no safety significance." So essentially, the reviewer had talked to people, looked at them in fact and has insufficient evidence to substantiate the allegation.

MS. GARDE: This is an allegation that was not specific?

MR. SHAO: Also he tried to talk to people, looked at documents. He couldn't find any documents since this thing has happened. He talked to the people. He looked at the procedure. Looked at other records. He couldn't find anything about this that he would consider sufficient evidence.

MS. GARDE: Your conclusion in this case assumes

that the procedures that you reviewed, the inspection records that you reviewed, all reflected the actual implementation of that procedure; isn't that correct?

MR. SHAO: Right.

MS. GARDE: But doesn't the allegation itself, in the body of the allegation, imply that implementation was not followed?

MR. SHAO: The allegation just says this thing has happened, okay?

MS. GARDE: That is not according to procedure?

MR. SHAO: Not according to procedure. And we talked to the people, we looked at a procedure, everything. So far there is no evidence that shows this has happened.

MS. GARDE: What evidence besides the procedures -- you mentioned inspection records, those would be developed according to procedures?

MR. SHAO: Right, field observation and welder interviews.

MS. GARDE: In this case, can you give me just an estimate of how many people you talked to?

MR. SHAO: I think --

(Discussion off the record.)

MR. FERRARINI: I'm Victor Ferrarini with the TRT. In this particular case, I probably talked to about 15 to 20 welders on this particular issue. As I walked

through the plant, I walked up and talk to them. That type of discussion with the individual welders.

MS. GARDE: These welders that were at the site at the time the allegation occurred or allegedly occurred?

MR. FERRARINI: I have no way of knowing whether they were there at that particular time. They were welders working there currently.

MS. GARDE: In this particular case, did you handle this whole allegation?

MR. FERRARINI: That particular one, yes.

MS. GARDE: If it is all right with you, I'll direct my questions to him.

MR. SHAO: Sure.

MS. GARDE: Mr. Shao used this as an example to show me, where they could, an allegation that could not be substantiated or refuted.

MR. FERRARINI: Correct.

MR. SHAO: We use this quite often. Even though we use the sentence, the staff has done a lot of work. We do a lot of digging, a lot of procedures, talk to a lot of people, and even then, in most cases we can say it can be refuted. Suppose we're not a hundred percent sure; we put on this statement.

MS. GARDE: Okay, I understand that, but I want to get a better understanding of the process you went

through to arrive at that conclusion.

In this particular paragraph, you say "no areas reviewed" and then you identify inspection records, field observation and welder interviews. The welder interviews were fairly informal, 12, 15 people as you were walking through the plant, so there's not going to be notes or documentation of that?

MR. FERRARINI: No documentation, that's correct.

MS. GARDE: Field observation. I assume this is you walking through the plant kicking the tires, so to speak?

MR. FERRARINI: It was actual observation of types of grounding currently being done at the time I was in the plant.

MS. GARDE: And inspection records. Now, does this category refer to historical inspection records that would have been prepared at the time period the allegation allegedly occurred?

MR. FERRARINI: Yes.

MS. GARDE: Do you remember offhand what was the time period that this allegation occurred? A year, a month and year?

MR. FERRARINI: I would have to go back and look at his records. I don't offhand recall.

MS. GARDE: Without you having done that, for

the sake of my next questions could you assume that the allegation came from a 1983 time period?

MR. FERRARINI: Okay, fine. Yes.

MS. GARDE: How did you reach the conclusion that an allegation which comes from not following procedures -- the core of the allegation is that procedures were not implemented -- this wouldn't have happened if procedures were being followed; isn't that correct?

MR. FERRARINI: If it did, it wouldn't have happened if procedures were followed.

MS. GARDE: How then did you reach a conclusion that in 1984, if people were following procedures, that it had not happened in 1983? When the only historical documents you looked at were inspection reports that were filled out during that time period?

MR. FERRARINI: Obviously, the only thing I could look at at that particular time was what was being done then. I would like to make one additional statement. When I said I wasn't sure whether the welders were there or not at that time. There was at least one welder who was there during that period, because he had been there for five years. So I would like to correct that.

MS. GARDE: So you haven't answered the rest of my question. If the allegation -- and let me state this again. If the allegation results from not following

procedures, where procedures are not being implemented, and there's some activity happening that is not covered by procedures, how can looking at procedures now and talking to people in the present answer the question of whether or not it had happened in the past?

MR. FFRRARINI: Procedures I did look at covered -- I looked at the current procedures and also procedures going back, so I did look at historical procedures.

MS. GARDE: The allegation is that procedures were not followed.

MR. FERRARINI: That's correct.

MS. GARDE: How does the paperwork review of what was supposed to have been done answer the question of what was being done or what was being alleged in this allegation?

MR. SHAO: You looked at NCR too? There was no NCR.

MS. GARDE: I would assume there would not be an NCR if there was an allegation that there was an activity going on that was not supposed to be going on, that was not being done according to procedures and was being done any way.

MR. FERRARINI: I understand your question and I can't think of any good way to fully evaluate that other than by looking at what was there, looking and seeing that

there's other items in place to pick up this alleged improper grounding, so I don't think there's any other way I could have pursued this.

MS. GARDE: Did you explore whether or not there was a way to determine whether there was -- let me rephrase the question. This is getting too complicated.

Is this a procedure that you generally followed with historical allegations?

MR. FERRARINI: You are asking whether it is the procedure that I generally follow?

MS. GARDE: Or Mr. Shao, yes.

MR. SHAO: Yes. One thing, if your question is, was the procedure -- if something is wrong -- if something is wrong and they correct it now, something they did wrong about two years ago and are not doing it, usually there's a record of that correction. I don't think Vic didn't find that kind of corrections. If they found all kinds of strikes two years ago, if they correct this, there would be instruction on this. We couldn't find any instructions and that's an indication that they didn't try to change something and the change was not recorded.

MS. GARDE: I guess we're getting ready to break for lunch. If you have the records on this, I have a couple more questions to ask and this is a good example to kind of flesh out some of the areas, maybe better than the

questions I had written up. Could you look at what you have and I'll look at it also over lunch and we'll pursue it more?

MR. FERRARINI: I don't have my backup records with me. It would be in the FOIA file.

MR. CHANDLER: He'll get it the same time you will, I guess.

(Whereupon, at 12:30 p.m., the meeting was recessed, to reconvene at 1:25 p.m., this same day.)

AFTERNOON SESSION (1:25 p.m.)

MR. NOONAN: We'll go back on the record. We have returned from lunch and are continuing with the questioning of Mr. Shao. Ms. Garde?

MS. GARDE: Vic, did you have a chance to look over AW-46 at all over lunch?

MR. SHAO: I would like to mention something. This issue was mentioned, was transferred to QA/QC group. It is on page P-13, appendix P. P-13. AW-46. The craft personnel carelessness results in a number of arc strikes. This concern was neither substantiated nor refuted. And also says it is mechanical and piping; we're looking at it right now.

MS. GARDE: So what you are saying, Larry, is that the generic implications that arise from that allegation are dealt with in the QA/QC --

MR. SHAO: The applicant had to address this some more.

MR. NOONAN: All the statements that have been made about going to QA/QC -- you have to remember that when the SSERs 7 through 10 were written, we went through those things. They were QA implications. What we did on SSER 11, ask Herb about his work that he was supposed to do, which is the basis for his SSER. All the other stuff that everybody is saying that's in the QA SSER means it is in

appendix P of the safety evaluation. It doesn't mean that Herb would have taken it and would have reevaluated it or done anything with it. It was really up to Herb to decide how he wanted to handle that, and I don't want you to get the implication that all these people gave it to him and he went out and did something unique and different with it. He could tell you this but clearly my understanding is he looked at it from the standpoint, did it affect anything that he did. That's really what he did. Not to go back and delve into it, do some more work on the site, any of that stuff.

MS. GARDE: We'll pursue that --

MR. NOONAN: I guess I had the same concern when I was reading the SSERs. Everything was referred to QA/QC. I want to assure that happened. That's why you saw appendix P in there. It is cross referenced for safety evaluations, SSER 11. That's all.

MS. GARDE: I just have a few more questions on this. Now the characterization of the allegation AW-46 on page N-67 is that the grounding for welding was accomplished by wrapping the grounding lead around the pipe and allowing the clip to rest upon the pipe and that this resulted in numerous arc strikes. Now, what you have referred us to before, Mr. Shao, was on page N-69, which was the TRT conclusion. The conclusion confuses me. After

looking over the characterization of the allegation, because it deals with one part of the allegation, but doesn't seem to deal with the second part. If I understand what Mr. Ferrarini did in his investigation, the results of the concern is that there was arc strikes. That's the concern that was kind of the basis of the allegation; is that correct?

MR. FERRARINI: That would be the -- if there were arc strikes that were undetected that would be a concern, yes.

MS. GARDE: And the allegation was that the arc strikes resulted from the action that's described as the grounding of the welding?

MR. FERRARINI: Correct.

MS. GARDE: Now when you went into the field, and you did your field observation and welder interviews, were you looking for arc strikes or were you looking for evidence that the grounding for the welding was accomplished by the wrapping around of the lead wire around the pipe? Which were you pursuing?

MR. FERRARINI: Obviously I was looking for both -- right? Because if I found arc strikes, they could be coming from a number of other sources. That wouldn't lead me -- the allegation was that this form of grounding led to arc strikes.

MS. GARDE: How did you -- how were you attempting to detect the arc strikes? Isn't it difficult to detect arc strikes at this stage of construction?

MR. FERRARINI: Well, especially on lines that are insulated, covered. I really didn't spend much time looking for arc strikes. I was looking for the cause. There's a nice plan in effect at the site, that the TRT did look at, covering arc strikes. That's the process. I wasn't concerned so much with the arc strikes, actually detecting the arc strikes. There was a system in place that could detect them.

MS. GARDE: Did you review the results of the N-5 inspections to determine if there had been arc strikes in this area?

MR. FERRARINI: I didn't have to read the N-5 reports to find out there were arc strikes. Arc strikes are common in a power plant like this.

MS. GARDE: But you are reaching a conclusion on whether or not arc strikes resulted from a certain unauthorized activity; isn't that correct?

MR. FERRARINI: Yes.

MS. GARDE: If you didn't look for the arc strikes to see if the results had, in fact, occurred, and if it was impossible to determine from the current individuals that you talked to and the field observations

if the activity in the past had, in fact, occurred, then I don't understand how you can reach the conclusion that it was neither substantiated nor refuted.

MR. FERRARINI: I didn't perceive the question there.

MS. GARDE: Shorthand: I don't understand how your process gets you to that conclusion. It seems to me that it is missing a number of steps to reach that conclusion.

MR. FERRARINI: The conclusion that it was neither substantiated nor refuted? That was based upon what we did do.

MS. GARDE: All right, let me move on. I'm not completely satisfied with that answer; but I'm a little frustrated that my questions -- it is not your fault, but let me move on to another area. Maybe I can flush out the kind of answers I need in other areas.

Mr. Shao, could you please turn back to N-13? I'm sorry, N-9. On the bottom of page N-9 there's a category number 10, subject: damaged pipe. Do you see that?

MR. SHAO: Yes.

MS. GARDE: There's a characterization of the concern and allegation which includes both a specific, that is, unauthorized weld repair to a gouge in a pipe requested --

two-inch pipe damaged by sledgehammer and general concern regarding handling of safety-related piping. Now, the specific allegation is pursued -- if I'm wrong, correct me -- through AP-5, AP, and AP-8, and AP-10, which are on page N-89. In the first paragraph under the assessment of safety significance you say that the assessment of allegation AP-5 by the mechanical and piping group of the NRC TRT was limited to the adequacy of the repair of the gouged pipe. Now, does that assume that there in fact was a gouge in a pipe?

MR. SHAO: Yes, there is a gouged pipe.

MS. GARDE: Would you have characterized this allegation as substantiated or unsubstantiated?

MR. SHAO: Let me read the conclusion here to you --

MS. GARDE: On N-89. You don't need to read it to me.

MR. SHAO: You read it?

MS. GARDE: Doesn't make any reference to whether or not it was substantiated or unsubstantiated.

MR. CHEN: I'm Paul Chen. I'm a member of the NRC TRT. The allegation as stated on the characterization AP-5 on page N-89 states that the welder was called by his foreman while checking the pipe and was subsequently fired. That was not investigated by mechanical team. The

mechanical team reached no conclusion regarding whether or not the welder was fired or not.

MS. GARDE: Yes. That wasn't my question. I assume that by reading through this that there wasn't any.

MR. SHAO: They have no problem with it being repaired.

MR. CHEN: Could you repeat the question?

MS. GARDE: I want to know whether you considered this particular allegation as substantiated or unsubstantiated.

MR. CHEN: It was substantiated to the extent that it was determined that there was a gouge in the pipe and it was repaired.

MS. GARDE: The next two pages go into a description of documents that were looked at and reviewed, I assume, in reaching that conclusion. There is a statement in the beginning of that section that said the allegation was investigated by NRC region 4 and discussed during the September '82 and March '84 licensing hearing. To what extent did you rely on the work of region 4 or the work of the hearing board or what was going on in the hearings to reach your conclusion?

MR. CHEN: I used that information as input. I did not rely totally on the region 4 inspection nor the discussions at the hearing.

MS. GARDE: Did you make it a point to consider all of the testimony that was offered on that point?

MR. CHEN: Only the technical aspects of that testimony.

MS. GARDE: What do you mean when you say "only the technical aspects"?

MR. CHEN: The identification of the gouge and the documents associated with the gouge and repair of the gouge.

MS. GARDE: You didn't consider, for example, the rebuttal testimony of the applicant? Did you read that?

MR. CHEN: My recollection is that I did.

MS. GARDE: Above and beyond the information that was provided by region 4 and by the hearing record, what did you look at in your investigation or inspection?

MR. CHEN: I think I reviewed the code requirements and the procedural requirements and looked at the documents to make sure that everything was in compliance with all the applicable requirements.

MS. GARDE: Did you independently go out on the site, look at the pipe?

MR. CHEN: The pipe was looked at by another member of the IRT during a walk-down with the alleger. I think there was some difficulty in locating the gouge because the pipe was painted.

MS. GARDE: Okay --

MR. CHEN: I actually went out and tried to locate it myself but couldn't locate it.

MS. GARDE: So someone else on the technical review team actually looked at the pipe?

MR. CHEN: I went out and tried to find it myself also, but some other member of the TRT did see the pipe.

MS. GARDE: Did you personally review all of the documentation on the procedures?

MR. CHEN: Yes, I did.

MS. GARDE: Thank you.

Mr. Shao, there's a number of references, and I could give you some more examples, but there are a number of references in this SSER to work done by region 4 in its regular inspection program, inspections going back to '80, '82, '78. To what extent did you instruct your team members to rely on the inspection work done by region 4?

MR. SHAO: My instruction to them is to make an independent investigation -- to make an independent investigation of the issue. Usually we go much further than region 4 did.

MS. GARDE: The conclusion to the gouge in the pipe on N 91 is that since the gouge was repaired and inspected satisfactorily, the allegation was found to have

no safety significance. Now, was this the type of allegation which you would pursue further, either by referring it to QA/QC or looking further to determine whether this happened other than this one time?

MR. SHAO: No, for this type of allegation we would not pursue any further because it was repaired properly.

MS. GARDE: What about the fact -- and Mr. Chen already said they didn't pursue the allegation -- that he was told -- the welder was told to do something improperly. Was that referred to OI? Chen?

MS. VIETTI-COOK: I have to check, but I believe it came from an OI report. OI had done their work and we pulled the technical part of it out, but let me double check.

MS. GARDE: As a general rule, when an allegation contained that type of wrongdoing instruction, if it did not come from OI would you send it to OI?

MR. SHAO: We will be reviewing these documents and looking at all the wrongdoing in the investigation.

MS. GARDE: It is up to OI to pull out what they see as wrongdoing? Is that correct?

MR. NOONAN: Repeat the question.

MS. GARDE: I asked Mr. Shao if he was going to refer, if this item had been referred, to OI. Annette is

checking to see whether it came from --

MS. VIETTI-COOK: It came from an OI report.

MS. GARDE: If it had not come from an OI report, if this is generally an allegation that contained wrongdoing, would you refer it to OI coming from the TRT or is OI doing that now as --

MR. NOONAN: We would transfer it to the TRT if we had identified it.

MS. GARDE: Would you please turn to N-14? "Welding area findings." Now, this conclusion or these findings do not contain anything about liner plates or the weldings on the liner plates.

MR. SHAO: Yes.

MS. GARDE: Was the welding on the liner plates issue considered under the welding area?

MR. SHAO: Yes.

MS. GARDE: Okay --

MR. SHAO: The welding that I personally looked at, the welding in the liner area, physically, in general is okay although the QA/QC people looked at the documentation and it was very poor and -- however, there are a couple of conditions so we referred the welding -- the liner welding issue, as an open issue.

MS. GARDE: That's because you determined that the liner plate was not safety significant?

MR. SHAO: That's one of the reasons.

MS. GARDE: What were the others?

MR. SHAO: Physically the welding itself doesn't look bad. There are a couple of corrosion spots, but in general it doesn't look too bad. As you know, the liners are not safety-related but they do have QA/QC problems in this area. That's why we referred it.

MS. GARDE: When you first got involved with the TRT and were involved in looking at the liner plates, there was no staff position on whether or not the liners were going to be safety-related or not; is that correct?

MR. SHAO: That's not true. I knew all along that the liner plate was not safety-related, even though later on, in order to confirm this, we asked NRR special branch to write a special letter with regard to Comanche Peak but I wrote a memo in general saying the liner plates are not safety-related.

MS. GARDE: I'm going to show you a document I got through the PDR. Would you tell me if this is the Olin memorandum that you are referring to?

MR. SHAO: This is for Vince Noonan, project director for Comanche Peak, January 17, 1985 on staff pool on spent fuel liner.

MS. VIETTI-COOK: There should be a memo that refers to the fuel canal and fuel transfer to be dated

February 26.

MS. GARDE: The other document, Annette, that I didn't get was the December 7, 1984 memo from Mr. Noonan, apparently to Mr. Park, that asked this evaluation, and that's not identified on the PDR documents either.

Mr. Shao, you said you knew all along that the liner plate was not safety-related. I assume when you say "all along" you mean starting with your involvement with the TRT?

MR. SHAO: No, before that. Because at one time I was in charge of structure branch.

MS. GARDE: You looked not just at Comanche Peak?

MR. SHAO: At other projects.

MS. GARDE: So when you came to the TRT team in June, you assumed that the same decision held for Comanche Peak?

MR. SHAO: I presumed so, yes.

MS. GARDE: You are aware that it was classified as a Q system by the project, are you not?

MR. SHAO: It was not classified as a Q system but it was required to follow appendix P. The liner is required to meet appendix P.

MS. GARDE: You say that it is still required to meet appendix P?

MR. SHAO: Yes. If you look at a Q system, the

liner is not there. However, in the spec they say you have to meet appendix P.

MS. GARDE: Was your evaluation done to determine whether or not the work done on the liner was consistent with appendix B?

MR. RICHARDS: The investigation of the liners considered first the fact that it was not listed in the FSAR as a Q item. It did note that the appendix requirements of appendix P was imposed by the GNH specification, so therefore it was to be constructed to the intent of the appendix P under a QA/QC program. The investigations that we did regarding the allegations from a strictly technical standpoint regarding the fabrication process, the inspections of our own inspections, of the final or physical item and to determine if they did indeed work a good weld from a technical standpoint.

MS. GARDE: In your inspection of the liner plate to reach the determination on the technical adequacy of the welds today or last summer, did you perform any ultrasonic testing?

MR. RICHARDS: No.

MS. GARDE: Just visual inspections?

MR. RICHARDS: Yes.

MS. GARDE: What percentage of the welds in the liner plates did you look at?

MR. RICHARDS: 20 percent were looked at closely.

MS. GARDE: How was that 20 percent selected?

MR. RICHARDS: That was just a random, but also availability -- it required support to be lowered into the cavities and required safety support, plus the operation of the crane and so forth.

MS. GARDE: Now you have a lot of allegations under this category which starts on N-271.

MR. SHAO: It is a legally random rather than scientifically random.

MS. GARDE: I understand; right.

Now, the allegations that are listed under this category raise more questions than the one that you have just answered. That is, what did the weld look like from the outside with the visual inspection, at this time. How did you determine that a visual inspection would be adequate to respond to these other allegations? There was backside welding allegations --

MR. RICHARDS: This was not my only response. Only a visual inspection was not the only response to the question.

MS. GARDE: What were the other things that you did?

MR. RICHARDS: In reviewing all of the requirements and to supplement the inspections, the visual

inspections, the requirements were reviewed, the procedures which were to be followed were reviewed. The techniques and welding processes were reviewed. Also, there were several -- there were interviews, informal discussions with a variety of personnel, and tried to pursue every avenue of each allegation to the best of my ability.

MS. GARDE: Mr. Richards, you said one of the things you looked at was the procedures. Did you come to independent conclusions on the adequacy of the procedures that governed the welding on the liner plates?

MR. RICHARDS: For the most part, the procedures were adequate.

MS. GARDE: Did you come to any conclusion regarding the use of the -- I used the word "checklist," but maybe it is sign-off forms that were to be followed by QC inspectors?

MR. RICHARDS: This was being simultaneously investigated by the QA/QC group. The documentation.

MS. GARDE: Are you telling me you made no conclusion on the adequacy of the inspection documents?

MR. RICHARDS: No.

MS. GARDE: The forms. I don't mean the filled out documents.

MR. RICHARDS: Not at the time of the inspection. I concerned myself more with final reports, final NDEs, not

the end process travelers.

MS. GARDE: Take me back to what you looked at when you reviewed the procedures. I want to have an understanding of what procedures you looked at and how you reached your determination about their adequacy.

MR. RICHARDS: Starting on page 275, regarding the review of documentation, which includes the procedures and specifications. First, was the G&H specification, and then the welding processes required. Now from the specification, I drew the requirements.

MS. GARDE: The comment is that "A comparative review of the Brown & Root's procedures to the Gibson Hill specification found the requirements to be consistent." What Brown & Root procedures did you look at?

MR. RICHARDS: Okay, on page N-273, under -- at the top of the page, shows these procedures. The Brown & Root procedures that I reviewed and found them to be consistent with the specification.

MS. GARDE: Did you look at all the revisions of these procedures?

MR. RICHARDS: Yes.

MS. GARDE: So am I to understand that your answer is that all revisions of all of these procedures were always consistent with the Gibbs & Hill specification?

MR. RICHARDS: Excuse me for hesitating. I'm

trying to recall. I'm trying to recall, and it probably was reviewed in the QA/QC group where a procedure -- I'm not sure which one -- had dropped the 10 CFR 50, appendix B requirement. I'm trying to recollect; but that the implication remained. That's off the top of my head, so --

MS. GARDE: I would like an answer to that question, so if you could look at your notes or materials, which I believe Mr. Noonan has, to give me an answer to that question, I would appreciate it.

MR. RICHARDS: Okay. However, the specific requirements remain consistent.

MS. GARDE: What do you mean by "the specific requirements"?

MR. RICHARDS: The codes or the types of NDE required in inspecting it.

MS. GARDE: The type of NDE codes?

MR. RICHARDS: The NDE disciplines required.

MS. GARDE: Let me make sure I understand what you just said. Are you telling me that throughout all the revisions of the procedures, the requirement for NDE examination of certain welds always remained the same.

MR. RICHARDS: All of the requirements that were specified in the specification for the fabrication and erection of the liners remained consistent.

MS. GARDE: What determination, if any,

Mr. Richards, did you make to see if those procedures were followed?

MR. RICHARDS: My inspections pertained to those procedures regarding the welding, the welding specifications, weld process specifications.

MS. GARDE: So you just looked at the specifications, you didn't attempt to determine implementation?

MR. RICHARDS: Right.

MS. GARDE: So your conclusions -- are your conclusions based on the suggestion that the procedures were followed?

MR. RICHARDS: My conclusions are based on the assumption that the welding processes were followed.

MS. GARDE: How did you factor into your conclusion the allegations that welding processes were not followed?

MR. RICHARDS: I couldn't find any evidence that I could draw a conclusion that they were not followed.

MS. GARDE: The evidence that you gathered was the procedures, visual inspections of completed welding in the liner plate today and what else?

MR. RICHARDS: The review of the technique determining and giving consideration where and how they were constructed.

MS. GARDE: Did you review --

MR. RICHARDS: And also that included drawing and drawing details.

MS. GARDE: Did you review the region 4 inspection reports that reported allegations on poor welding techniques in 1978 and '79? I think they are referred to in here.

MR. RICHARDS: Yes.

MS. GARDE: To what extent did you go further than those region 4 inspection reports pursued those allegations?

MR. RICHARDS: I used those reports for inputs, and they did help channel some of my starting reviews, but I did go farther for -- give it more depth rather than stopping where they did. I felt it was a more umbrella investigation.

MS. GARDE: I don't have a copy of those inspection reports here. If my recollection is wrong, someone please correct me. If I recall, the inspection reports included a list of allegations dealing with poor welding techniques. It is on page 0203, and SSER number 11. Let me read this to you because it is a direct quote from the inspection report. "The resident inspector has become reasonably sure that there were difficulties encountered by the welders with water, moisture, and in some instances,

with concrete on the weld surfaces and that in some instances the welds may not be completely sound internally. These welds, however, serve no strength purpose and need only be smooth and leak-free, factors established by visual inspection, dye penetrant and by vacuum box tests of the joint after it is complete. The allegation, while probably true, has no safety significance."

My question to you, Mr. Richards, to what extent did you rely on the looks of the region 4 inspector as to the technical merits that I just read to you?

MR. RICHARDS: I recall having read the region 4 report, and I, rather than to depend upon that, I was concerned with the allegation of, as I considered, poor conditions rather than techniques.

MS. GARDE: You mean poor conditions while the welding was occurring?

MR. RICHARDS: Water and concrete are conditions, not techniques. I was concerned as to the sources, where did the water or where did the concrete come from; and I have a discussion in here under the review of fabrication, both fabrication technique --

MS. GARDE: What page?

MR. RICHARDS: 274. The fabrication of these structures took place outside the building structures or the fabrication of the liners. And then set in place. The

fact that this fabricatfon was performed open to the elements. From that, on page 277, I have listed two possibilities of the sources for how we had that type of contamination.

MS. GARDE: This is the more narrow allegation of water from concrete running past the backing strips into the weld joint areas; right?

MR. RICHARDS: Right. When they made a concrete pour, once the liners were set in location and made a concrete pour, apparently concrete spilled over and ran down the side of the liner plate. The groove butt weld had at this time not been performed.

MS. GARDE: How did you determine that the allegation which I read to you on 0203 from that inspection report only dealt with the water entering the leak chase channels and running past the backing strips and not into more general conditions or techniques, as you referred to them, in the welding in general on the liner plate?

MR. RICHARDS: Would you repeat that?

MS. GARDE: You are narrowing my question. Your answer narrows my question and cuts out a lot of the concern that I'm asking you how you dealt with. You are responding to only a very narrow, smaller number of welds; that is, those where the water poured from poured concrete had entered leak chase channels and run past backing strip

into weld joint channels.

MR. RICHARDS: I don't see how that narrows your question. On page 278, in looking at NCRs, in looking at NCRs where it is documented, some of these conditions, and item 2 on page 278, water -- NCR is where it was noted -- water seeping from locations where concrete had been poured and contaminating components of liners being fabricated. Item Number 3, water in leak chase channels interfering with welding. Now, the TRT notes here that the source of water described in item B of AW-40 is reasonable to believe.

MS. GARDE: What does that mean, that that's possible?

MR. RICHARDS: That it is possible, and that being open to the elements where water had seeped through between the plate and the backing strip into the leak chase channels.

MS. GARDE: Number 4 says "Too many activities causing interference." Did you assume that statement to only refer to contamination of welding through the methods described in numbers 2 and 3?

MR. RICHARDS: No. Just as is: too many activities causing interference.

MS. GARDE: Did you assume that the allegation that we read from the SSER number 11 to only deal with backing strip -- welding contaminated through the methods

described in number 2 and number 3?

MR. RICHARDS: Those were the only -- in my investigations and discussions, those were the only two possibilities that you could determine from where the source of contamination came from.

MS. GARDE: So you made a judgment that the only reasonable contamination of the welds in the liner plate could have been from when the concrete was being poured --

MR. RICHARDS: Or when it rained.

MS. GARDE: Or when it rained.

What is the basis for that judgment?

MR. RICHARDS: The only basis is that I found no other causes.

MS. GARDE: What did you look at to determine that there were no other causes?

MR. RICHARDS: The only causes that I found in looks at the NCRs gave me no reason or no reasonable definition of cause of where this water or concrete came from. Also, in discussions with personnel, they did say that this was a source of contamination. Rain and during the pour of concrete.

MS. GARDE: So your judgment based on your experience in this area is that that was the only reasonable source; that's the kind of contamination people must have been talking about because it is the only kind

that made sense to you: is that correct?

MR. RICHARDS: There was no other evidence to make me think in any other way.

MS. GARDE: Did you ever have an opportunity to talk to any of the allegers that raised the welding issues on the liners?

MR. RICHARDS: Yes.

MS. GARDE: And --

MR. RICHARDS: One.

MS. GARDE: These were not inspectors, these were welders?

MR. RICHARDS: The alleger?

MS. GARDE: Off the record --

MR. RICHARDS: You asked me if I had talked to any alleger?

MS. GARDE: Yes.

MR. RICHARDS: I talked to one.

MS. GARDE: Was that alleger a welder?

MR. RICHARDS: I hesitate to say right now. I think so.

MS. GARDE: I'm going to go to another area.

MR. ROISMAN: I want to ask you one question on the safety-related issue on the liner plate. As I understand it, the reason that it is not safety-related is because the principal barrier to keep the water in the

cavity is the concrete rather than the liner plate, so even if the liner plate fails, the concrete works. Is that essentially it?

MR. RICHARDS: Essentially.

MR. ROISMAN: I take it then if there were some uncertainties or indeterminate status about the capability of the concrete, if its status were indeterminate for purposes, say, of seismic 1 qualification, then the importance of the liner plate as a barrier would have to be enhanced. It might become an alternate way of dealing with that issue --

MR. RICHARDS: No, there's no structural integrity to the liner plate.

MR. ROISMAN: So even if it were Q'd, even if it were built to Q safety requirements it wouldn't help if you were trying to protect against an earthquake.

MR. SHAO: No, concrete.

MR. ROISMAN: And if it fails, that's it?

MR. SHAO: If concrete fails, that's it.

MS. GARDE: Mr. Shao, material traceability allegations, were they covered in this SSER?

MR. SHAO: Yes. We have some material traceability problems there, allegations of material traceability.

MS. GARDE: Could you point out which allegation

dealt with material traceability?

MR. SHAO: Masterson worked on this and -- let me dig it out.

MR. MASTERSON: Number 33, page N-217.

MS. GARDE: Mr. Shao, if you want Mr. Masterson to answer the questions, that's fine.

The material traceability allegations that I'm familiar with I can't identify from the page numbers or from what I read. The ones I know of, they may be in here, but I can't tell from your description. I notice that on N-223 that you require no action on the material traceability issue.

MR. MASTERSON: That's correct.

MS. GARDE: What is the basis for your decision to not require any action?

MR. MASTERSON: There was no open issue discovered in this area.

MS. GARDE: Did that include a detailed review of all allegations that you had received up to this time to determine whether or not specific allegations that you were given were substantiated or not substantiated?

MR. MASTERSON: No, that was based upon the allegations identified in the SSER.

MS. GARDE: Are there additional allegations on material traceability which are not covered in here?

MR. MASTERSON: I think there are some in QA/QC, yes.

MS. GARDE: They were referred to QA/QC?

MR. MASTERSON: They were originally in QA/QC. They did not come through mechanical piping.

MS. GARDE: There was no review of the technical significance of the material traceability allegations of QA/QC?

MR. SHAO: I would make one correction. On AH-3, on page N-222, we have one incident there was lack of traceability on one hanger. Lack of material control, and a violation of disposition of NCR. We picked it up and we put it in appendix P, page P-15, so that's one incident.

MS. GARDE: Mr. Masterson, could you describe your work in making the determination that the allegations on material traceability were not substantiated?

MR. MASTERSON: Basically, I began -- because most of these were not very specific; they were in general allegations about traceability -- I began by looking at purchasing records for certain time periods to see how the material was brought on site. I looked at procedures that governed control of materials for pipe hangers. I went out into the field and did inspections of randomly selected supports looking for heat numbers and comparing them against what was in the hanger fabrication packages.

MS. GARDE: Did you do any testing of material to determine whether or not it met the requirements that that particular heat number indicated it would?

MR. MASTERSON: No.

MS. GARDE: How did you deal with the allegations received by the technical review team that heat numbers had been changed on the site? Had been etched into pipes, piping runs on the site?

MR. MASTERSON: I didn't have any of that. I'm not sure I understand the question.

MS. GARDE: Okay, there were allegations that were given to the TRT, which I can't identify here, which I though that you had. They do not appear here. I have not seen them in the other SSER. I'm not sure if they are in process with some of the other new allegations on material traceability. What I want to understand is how those allegations that dealt with falsification of heat numbers on the site were dealt with.

MR. MASTERSON: The only allegation that we had that would fit that description I think is AE-7 --

(Discussion off the record.)

MR. NOONAN: Ms. Garde, if there's an allegation that you are missing, if you could identify to us being more specific, I would check to find out where it is at.

MS. GARDE: If you didn't pursue on etching and heat number traceability, it is not here and I'll have to go back --

MR. MASTERSON: I think you're talking about one received subsequent to this SSER and that's being worked on now.

MS. GARDE: Maybe I am. We'll talk about that later.

(Discussion off the record.)

MR. MASTERSON: There was one subsequent to the SSER.

MS. GARDE: If that's not supposed to be in here then I don't have any other questions on that.

Mr. Shao, did you attempt in doing SSER number 10, did you attempt to review all of the CASE exhibits that have been submitted in the hearing that may have raised issues that fit into that category?

MR. SHAO: Yes. I instructed my people to look at everything, all the things that related to this allegation with all the allegations we looked at.

MS. GARDE: Is there a document which you prepared or which you are familiar with which listed CASE exhibits and correlated them with the SSER?

MR. SHAO: Citizens Association for Sound Energy for example, submitted large numbers of NCRs in support of

various issues in the hearing.

I'm pretty sure we can do that.

MS. GARDE: Can you identify a document that would do that?

MR. HOU: In the SSER number 10, we do not have categories with Citizens Association for Sound Energy, but in our additional evaluation of the new allegations, there are 10 allegations related with Citizens Association for Sound Energy. That is still under review and not completed.

MS. GARDE: Are those allegations that come from new information from CASE or information submitted through the hearings over the years?

MR. HOU: It is related with the hearings. I didn't hear the answer to that question. Would you read that back?

(The reporter read the record as requested.)

MS. GARDE: I don't have any more questions on number 10. I'm not sure if our people are going to go right into civil/structural now or if we should take a break and start QA/QC.

(Discussion off the record.)

MR. HOU: I have to make a correction of the statement I made a while ago. I say all those 10 CASE issues is related to hearings. It is not. Some were related to hearings, some were related to a new issue.

MR. ROISMAN: Could you please state for the record what your position was on the TRT and what your position was with the NRC at the time that you worked for the TRT?

MR. LIVERMORE: I'm Herb Livermore. I am the ex-group leader of the now defunct QA/QC group. Prior to coming to the TRT, I was the senior resident inspector for construction at the Clinton plant, also assigned to the Midland plant. When the Midland plant folded I was assigned to help out on the TRT. I joined the TRT in progress in the middle of the second session, replacing Mr. Conlan as the group leader for the QA/QC group.

MR. ROISMAN: When was that, the middle of the second session?

MR. LIVERMORE: Sometime in the latter part of July. July 29, August 10, 1984.

MR. NOONAN: May I clarify the record? Technical review team basically is finished. I would not use the words defunct group. The TRT QA people have reported to Mr. Shao and Mr. Calvo directly on all the TRT issues that are open and still unresolved. In addition, we have made Mr. Cliff Hale, who was Herb's deputy during the days on the site, as the person now responsible for all QA/QC activities from this point out. Mainly because Mr. Livermore has now been transferred to Region 2 and is

no longer available to us on a regular basis, Mr. Hale will be handling all the QA/QC issues from now on.

MR. ROISMAN: What was your prior experience with the subject of QA/QC and with respect to training in that subject area?

MR. LIVERMORE: My training experience was with the NRC in 1979 until the present time as an inspector, construction inspector with Region 3 for a year as a traveling inspector visiting different plants and inspection tours. And after that in 1980 I was assigned as construction resident, senior resident in Clinton, where I served a tour of close to five years during construction of that plant. Prior to joining the NRC -- let me stop for a moment. Do you wish my experience prior to the time with the NRC?

MR. ROISMAN: Yes, I'm particularly interested in any experience you had with regard to quality assurance, quality control. That's my principal focus.

MR. LIVERMORE: Starting way back in 1951 I joined the aircraft industry with the design function, with the manufacturing function. At that time, I became associated with quality aspects of manufacturing design only as a side issue.

I then transferred to the missile industry with General Dynamics on the Atlas missile. At that time, I

joined the quality group, quality assurance at that time, which not only was the quality group, we also did the testing. At that time, I believe in that area, that's when 9850 came into being in the industry. I was associated with that quality group at that time as a quality assurance test engineer and a process engineer.

In '66 I went with General Electric in the space industry and worked for the NASA quality lab out of Huntsville, Alabama, doing quality assurance review in the automatic testing of the Saturn second stage, North American Rockwell. After that, I transferred to Cape Kennedy with the launching of Skylab. That work came to a close.

I joined General Electric in the nuclear industry as a reactor plant contractor, which was a quality division that did all of the monitoring of nuclear plant testing on cruisers.

I went to the Naval nuclear shipyards at Newport News and monitored construction of the nuclear cruisers, installation of the power plants, startup testing, physics testing, power range testing. That went through 1979. I think that I spent three years in the shipyard at that position. In 1979, is when I joined the Nuclear Regulatory Commission, as I spoke of before.

MR. ROISMAN: Thank you.

MR. LIVERMORE: Might I just go on a second. On my introduction, I wanted to mention that Mr. Cliff Hale is my assistant and I do have six reviewers back behind me for support who are major reviewers. I want to just mention that we have been away from this job, with the exception of Cliff, since last June so if our memory gets very foggy I want to tell you that's the reason. We have been trying to come up to speed on this, and I want to mention, too, that our conclusions on these SSERs, the SSER 11, are integrated conclusions, collective ones by my staff and myself -- individual reviewer, Cliff and myself. And I might add that all the these inputs and the SSER 11 itself were reviewed many times, constantly, by the manager.

One thing I would like to add to the record, I would like to read the section out of SSER 11 on page P-1. I want to read this for the record.

Starting with the second paragraph prefixed by a couple of words, "We did not perform a complete programmatic review of 2X QA/QC program of Comanche Peak. A review of that in scope entails an assessment of all QA/QC documentation such as 10 CFR 50 appendix B criteria, Comanche Peak final analysis review, design specifications in the QA manual."

Neither the QA/QC group nor any other TRT group performed such a comprehensive programmatic QA/QC review.

QA/QC group was directed to address each QA/QC allegation assigned to it and to expand the scope of the assessment if necessary to include management and quality implications."

Our results were based upon a biased sample initially developed from the allegations. This is noted on page 0-5, and P-36. Our conclusions state in many places that there appear to be, in our scope of area significant and generic implications, an ineffective QA program. The site QC inspection program is less than fully effective, P-31, and numerous instances of document control problems, hardware problems, problems with the TRT, et cetera, challenged the adequacy of the QC inspection 134. This is written on P-35.

Also SSER 9, page M-11, also states there are serious weaknesses in in the QA/QC program. What I want to say, these conclusions, as I stated, are formulated only in the scope of the TRT group's effort within the confines of the boundary of the TRT effort. In other words, we took tiny slices, bits and pieces that were bounded by the allegations and put together. Our group did not assess the other areas outside the scope of the TRT. That's noted on P-1. I think that's all I want to mention at this time.

MR. ROISMAN: Let's follow up a little bit on that. Do you feel that you saw enough to make your conclusions -- to the extent that they refer to plant wide

implications -- valid?

MR. LIVERMORE: It was not within our purview to make any conclusions for plant-wide. As I just stated, our conclusions were strictly within the confines of the TRT effort. That's all.

MR. ROISMAN: For instance, on page P-35, you indicate, after a long paragraph at the end, challenges the adequacy of the QC inspection program and CPSS on a system-wide basis."

MR. LIVERMORE: That "system-wide basis" means within the confines of the TRT activity.

MR. ROISMAN: Do you have any judgment yourself, based upon your own experience, as to what you would expect to find if you did the level of programmatic review that you indicated at the beginning of appendix P you didn't do? If that kind of review were done?

MR. LIVERMORE: Anything is possible and anything that's possible may have an effect, but I don't have this information. I didn't do this so I can't make the assumption.

MR. ROISMAN: You don't have a judgment in other words?

MR. LIVERMORE: That's a different subject with my background, whether I have the judgment. I did not do this. It was not within our scope and it would be out of

my bounds to make that judgment since we only looked within the TRT effort. I can't make a algebraic-type extrapolation.

MR. ROISMAN: On page P-29 under paragraph 4.4, you say, this is construction and testing, "following is a list of these recurring practices for which construction craft personnel was either a primary or contributing factor and had a plant-wide impact." What did you mean there when you used the phrase "plant-wide impact"?

MR. LIVERMORE: Again that "plant-wide impact" is within the confines of the TRT effort.

MR. ROISMAN: You mean that portion of the plant that you looked at?

MR. LIVERMORE: That portion of the TRT effort. In other words, we did, again, a slice that was bounded by the allegations. It was a biased type effort because all we did were look at allegations. Therefore, within those bounds we made conclusions like this in the area of construction and testing. We put our conclusions together with the other SSER groups. These again are still within the confines of the TRT effort and that's exactly what it means.

MR. ROISMAN: But what, in your judgment, is the usefulness or validity of the process that you concluded. Was the slice big enough to matter?

MR. LIVERMORE: The slice was big enough to satisfy our marching orders that were in the detailed guidance -- technical review team guidance document June of '84.

It appears that the problem was caused, even if in part, by a failure to properly implement QA or then inadequate administrative management controls then addressed this aspect. An assessment will have to be addressed. This again was a TRT administrative guidance within our TRT effort and this is exactly what I tried to do, was follow my marching orders that asked me to do this. Did I lose track or answer your question?

MR. ROISMAN: I don't think you answered it exactly. The question was: Given the scope of what the TRT was going to look at, did you look at enough of the plant to be able to feel that your conclusions were of any use for anything? Or did you look at something that in your judgment was so narrow that except for the particular thing you looked at, there is no useful implications that can be drawn from it.

MR. LIVERMORE: The answer to that is, the first part of the question, yes, I feel what we did was useful in that we certainly did our job as a TRT member and made findings as we have here, for the effort that we looked at. I can not do any more than that.

MR. ROISMAN: But you were asked in that instruction and a number of places in the testimony of other SSER people over the last couple days, including Mr. Noonan and Mr. Ippolito, to looked for the generic implications of the things that you were finding. Did you feel that you had enough data to make generic implication conclusions?

MR. LIVERMORE: Excuse me a second.

(Discussion off the record.)

MR. LIVERMORE: I think Mr. Hale has a very good response to that if you care to hear it.

MR. ROISMAN: I'm glad to hear from either of you or both.

MR. LIVERMORE: This is a collective effort. We're just pitching in here, if that's all right.

MR. HALE: With respect to your question concerning the usefulness of our evaluation, I agree with Mr. Livermore it was useful and I believe perhaps the purpose of it is it did create a question for which I believe the applicant now is being asked to respond.

MR. ROISMAN: I guess my question is, to take some hypotheticals: You could have been called in to take a look at a single NCR, taken a look at it, concluded that it was improperly handled, looked around and determined that it was improperly handled because the person who was

to fill it out did not understand the procedures, gone and looked at the procedures and decided that the procedures were written in such a way that it wasn't surprising that he didn't understand, they weren't very clear procedures, and then left the plant. That could have been the sum total of a look. Based on that look, someone could have said to you, what's the generic implications of what you just found about that NCR? You might say, in fact, I guess I would be surprised if you didn't say, having looked at one NCR I don't feel comfortable saying that are any generic implication. That one NCR was not done properly and the procedures written for it were not proper and maybe I can say it is probably the case that other people working with those procedures could have run into the same kind of problem. Period.

You look at many more data points, more NCRs, a lot more information to look at. Did you have enough information to be able to say, when you put the question to the applicant, the question does not answer my particular deficiency. I found that NCR done improperly. But did you have enough to say you have now a question about your whole plant, generic, plant-wide and I want to know, do you think you had enough to be able to make those kinds of conclusions if you felt they were warranted?

MR. HALE: You use the term "whole plant," and I

am assuming by that you are talking about whole program. No, and I don't think our SSER states that. I think it does point out areas of weakness, areas where we perceive that there are weaknesses or ineffectivenesses that may be broader than what we have identified. That is the question that we have posed to the applicant.

MR. ROISMAN: Well, was it broad enough to call into question the entire QA/QC program of the plant?

MR. HALE: I would not venture a guess at this time. I believe that any areas that were not considered would have to be justified or shown that it would not have been effective by the things that we found.

MR. ROISMAN: So that if all that happened were that you write your report, you ship it off to the applicants and they write back a letter to you that says, no, you would have asked the question, is there any part of the QA/QC program at this plant which you feel can be relied upon to have worked properly, and thus whose construction output or the construction that there was to review could be assumed to have been done properly? Your answer would be no, I can't conclude that. You have a doubt about all of it until they answer your questions?

MR. HALE: I don't know if I ferreted a question out of that or not.

MR. ROISMAN: Sometimes I give you a conclusion

and say: Do you agree? Let me try again. Based on the information that you gathered, you put a series of questions to the applicants. My question to you is, absent satisfactory answers to those questions, is it your opinion that every aspect of the QA/QC program is in question, and that therefore, every aspect of the construction at the plant is in question until the answers come back from the applicant and you are satisfied.

MR. HALE: We can only truly speak to those areas that we identified as weaknesses. The evaluation of what that response to those will be will be considered with respect to what we identified. That's the basis upon which we evaluate that, "we" being the NRC.

MR. ROISMAN: How much of the QA/QC program at the plant -- I'm not talking about how much of the QA/QC program at the plant have you documented deficiencies in. That's clear. One can read SSER 11 and that comes out crystal clear. But you also had a mission to look at the implications of the deficiencies that you found and what I'm trying to understand is: Is one of the legitimate implications that you have from your look that the adequacy of other areas of QA/QC that you did not look at is in doubt?

MR. HALE: That's a part of what the committee is being asked to respond to. The implications are for

them to define. We identified those findings that are in the SSER that we had with respect to that. These may have further implications. I'll leave that for the applicant to address.

MR. LIVERMORE: I would like to read the SSER 11 here on page P-36, page P-36, first paragraph, about mid-way. "2X shall evaluate the TRT QA/QC findings and consider the implications of these findings on the quality of construction at Comanche Peak. 2X shall then submit a program plan of schedule for completing a detailed and thorough assessment of the QA issue presented. The programmatic plans and the plans for implementation will be evaluated by the NRC Staff."

MR. ROISMAN: The part where there may be some confusion in my question is that I'm attempting to distinguish between whether you believe that a particular part of the QA/QC program has a deficiency. That's one side. The other side is, whether you believe that there is doubt about the existence of deficiencies in part of the QA/QC plan, which doubt can only be overcome by the responses that you get from the applicant.

MR. LIVERMORE: Repeat the first part of that, first.

MR. ROISMAN: First part is whether or not you believe that there are deficiencies in portions of the

QA/QC program -- and I think this is right, you do, and you detail them in the SSER 11. I think this is a deficiency, I think that's a deficiency.

MR. LIVERMORE: Yes, we pointed out many problems in here, inadequacy, et cetera.

MR. ROISMAN: Is it your judgment that the QA/QC about which you are not saying anything regarding specific deficiencies -- either there were not any allegations about it or whatever -- are those in your judgment in doubt because of the deficiencies that you found in the other, a doubt which you are now waiting for the applicant to alleviate by its response?

MR. LIVERMORE: The answer to that is anything is possible, but I don't have that information. All we can do is present what we have, turn it over to the company and say, it is your ball, run with it and you tell us.

MR. ROISMAN: That sounds like -- I'm not asking are you now convinced that other areas of the plant have deficiencies. I'm asking you are you now convinced that there's a doubt about the other areas of the plant which would not have been there but for finding the deficiencies that you did find.

MR. LIVERMORE: I guess the answer is I thought we said it all, but from a personal standpoint surely there is doubt. Does that answer your question?

MR. ROISMAN: Yes. Let's go to the section on page P-36 that you just read to me a moment ago, Mr. Livermore. It appears in looking at that that there is at least two separate things that you are directed to produce: The first is an evaluation of the TRT QA/QC findings and a consideration of the implication of these findings on the quality of construction at the plant; and the second is, after that is done -- and I'm assuming the "after" by "it shall then" -- shall submit it to the program plan and scheduling for a detailed and thorough assessment of the QA issues presented in the enclosures to the supplement. Am I right that that contemplates two separate documents?

MR. LIVERMORE: I don't think you call it two separate. To produce anything you have to evaluate the findings. That's what we're saying. Take this information we gave you, evaluate it and come up with a plan.

MR. ROISMAN: Did you expect TUEC to provide you with an evaluation?

MR. LIVERMORE: Let me throw that football over to Mr. Noonan. As far as the recovery plan is concerned, I'm not involved in that, and I think that's a programmatic type thing that should be answered by him.

MR. NOONAN: Would you repeat the question?

MR. ROISMAN: Did you expect to receive from

TUEC an evaluation of the TRT QA/QC findings and a consideration of the implications of the TRT findings on the quality of construction at Comanche Peak as a definable work product?

MR. NOONAN: Yes, we will expect to receive from TUEC response to all of the TRT concerns raised in the SSERs. The answer is yes.

MR. ROISMAN: That's something different from a program plan and schedule for completing a detailed and thorough assessment of the QA issues presented in this SSER 11.

MR. NOONAN: Not different. Part of it.

MR. ROISMAN: Different in the sense that will be answering something else. One will be evaluate, and the second is a program plan in light of that evaluation?

MR. NOONAN: I don't see where you get that kind of distinction. The program plan is going to address all concerns by the NRC, whether a scheduler, whether they are technical or what.

MR. ROISMAN: My question is: What is contemplated? And I tell you it appears on the surface that it was that before you had a program plan you had to have an evaluation. TUEC shall then submit to the NRC a program plan and schedule.

MR. NOONAN: No, the program plan will be -- the

evaluation will be part of the program plan. Evaluation will be part of the program plan. That's what's contemplated.

MR. ROISMAN: The CPRT is your understanding --

MR. NOONAN: Yes. The evaluation is in the CPRT.

MR. ROISMAN: We got to the end, so I want to go to the beginning again and I want you to describe for me how you carried out your responsibilities under SSER 11. Let me explain the kinds of things I'm interested in. I want to know if you did independently evaluate data that you received from the other SSER teams, how did you decide which ones you would independently evaluate? That would be one question. Let's start with that.

MR. LIVERMORE: I think you got two questions. You wanted a mode of operation first of all?

MR. ROISMAN: I thought -- what I want is to tell you that's the area I'm talking about. The first question in the area of mode of operation is if you independently evaluated any of the findings you got from the other SSER teams, how did you decide which ones to evaluate?

MR. LIVERMORE: All right, going back when we were on site, mode of operation was governed by this document that I mentioned before, our guidance summary. There were separate groups, and nothing was clear-cut at that time; and I say "nothing" because to be there -- you

have to realize we were in two trailers with a whole number of people. Now, all the groups were not there working exactly the same time. The civil structural work was winding down by the time I got there. Electrical was almost finished. I was doing no work in parallel with Mr. Shao. Nothing was all parallel that we could sit there and collaborate daily. They had their allegations to review. Our group had ours. At that time of course we were more interested -- we were interested in our allegations and we had a job to do. As a result, our biggest coordination was with Larry Shao's group only because the other groups had just about left by that time.

We did have not daily or whatever -- we did have coordination of the site with these people. They were busy, we were busy. When their people, Larry's people would have something they wanted to talk to me about we would certainly converse. There was no specific paper handed me that said, I have a problem and I want you to address that. It was verbal. There were certainly some banter back and forth in regards to pipe supports and steam generator supports, this type of thing.

Again, it was all verbal coordination. When we left the site, we just moved on; the main coordination took place with the SSERs. Let me skip back a second. I skipped one thing. During our formulation of our write-ups

we were stationed at Nicholson Lane with Larry's group and the civil and mechanical. The electrical SSER was way ahead of us at that time, and there was no chance to do daily coordination with the electrical then because we were not overlapped. They were ahead of us. It was one of those logistics problems. Certainly not by choice but by -- it happened that way.

We did do coordination with Larry's group. In the area we talked with the fellow, Chuck, that was doing the fuel pool coordination there. When Larry had finished his write-ups for his individual SSERs he asked me to review them. I did go over and comment on them. They are a matter of record in the FOIA. This is the type of feedback we had in there.

Again, this was not a formal-type, letter writing-type-thing, it was a working-type coordination you normally get if any group of people are working together.

As we went on and it suddenly became very apparent we were coming to the close of our effort, it was at that time that we came up with appendix P that went with the SSER. And the main purpose of that was to correlate, coordinate and bring together all this quality assurance in the other group. I think it is all well defined in that SSER.

Now, trying to get back to your other question

now, our main coordination for our input from the other groups was their SSER. The way we worked that, our mode of operation that we took their SSERs, split them up within our group and we had a reviewer for each one. He went through each one. We took all these items, we gathered up all the issues, put them in piles or stacks, categories, and identified them to the world, so to speak, through this, and these conclusions that we used these for -- we made conclusions on them as we were directed to -- were again within the confines of the TRT effort.

MR. ROISMAN: What I had in mind was -- let's just take an example. You may remember from the discussion earlier today with Mr. Keimig that we discussed the findings with regard to allegations on the test program issue. And that Mr. Keimig had reached the conclusion that with respect to the test program issue, that there was no reason to conclude that there was an effort on the part of the company to use the least conservative or less conservative approach in compliance with respect to regulatory guides and FSAR commitments. But in the document prepared by him, there were two instances which the document acknowledged, did show some deviation from the most conservative approach, and one of them was the containment integrated leak rate test and the other had to do with hot functional testing.

I assume that if it were true that management was trying to go to the least conservative approach, particularly if the justification for them doing it or the reason they did it was scheduling of costs, that that would be something that was of interest to your group. My question is: Did you take conclusions such as the one contained in Mr. Keimig's portion of SSER number 7, that the TRT found no substantive reason to believe that the TUEC startup management has a tendency to liberally interpret FACR regulations, did you take that at face value and rely on his judgment or did you in some instances see things that made you want yourself independently to evaluate the underlying facts and see if you agreed about the conclusions?

MR. LIVERMORE: The answer to that, in general, as our people and myself went through these they were instructed to look for any quality concern there. Throughout these documents, to underline it, pull it out and put it in our category, pile, whatever it is. As each person read through these, when he came upon anything that was a quality concern, this is what he would do.

I don't know the answer to that specific one, but if it had a quality concern that was apparent to us, we would take it at face value, pull it out of there, bring it to appendix P, review it, I would review it, Cliff would

review it. And at that time if we felt we had to look at any further or we felt at that time there was not enough information or it wasn't necessary, we didn't include it.

So the answer to your question, we took what was in those SSERs at face value, but if we saw something out of line or felt we had to go further, we tried to do that. We are certainly not perfect, but that's what we tried to do.

MR. ROISMAN: The items we were just discussing in the testing appear in appendix P at P-18. And the allegations are listed in AT-1 and AT-7. If you have with you today the people for whom that piece of evaluation was in their scope, it might be helpful if one of them could answer a couple questions about it to understand how they work in specific, what findings were made in what SSER for purposes of appendix P.

MR. LIVERMORE: There was nothing magic about them. We just pulled them out. We saw that type of concern in there. We then tried to bring it down into short form. We may have reworded them in some cases, but at least the point was if we saw a quality concern, there was nothing magic about it.

MR. ROISMAN: How did you look at the question of the generic implication, if any, of the two findings that appear there, AT-1, AT-7?

MR. HALE: The categories that we developed for appendix P came, I guess, after we accumulated the information from the other SSERs, including appendix O of SSER 11. Then we placed those within categories we thought they best fit, and the assessment that we did of those was which one of these categories did they most appropriately fit in, and we placed it in the construction and testing category which indicates potential weaknesses in the QA/QC program.

MR. ROISMAN: Was it not relevant for the purposes of how you viewed your responsibilities in SSER 11 if the cause of these two problems was a management attitude or a training problem or an inadequately written procedure, was that irrelevant to what your role was in SSER 11?

MR. HALE: If the allegation or concern that we're reviewing related to one of those issues, then we would consider that aspect. Otherwise, we did not.

MR. ROISMAN: In this case, the allegation did attempt to -- the allegation said the reason these problems exist is a management attitude, but it is not an allegation that you investigated, it was investigated in another SSER and they concluded in that other SSER that it wasn't a management attitude problem. Now, my question is, just how did you deal with it when the other SSER had a conclusion

about that kind of a question? Did you just accept that conclusion?

MR. HALE: We did not deal with their conclusions. We dealt with those issues which we saw as within the QA or the QC program. They may not have had any relationship to the conclusion that was made within their assessment. That's their assessment, usually looking at it from a technical issue. We reviewed those assessments for indications of QA/QC problems. When we saw what appeared to be one, then we would accumulate that for inclusion into appendix P.

MR. ROISMAN: I take it from what you are saying that it didn't matter why the deficiency was there. What mattered for your purposes was that it was there, not what, if you will, the root cause of it was.

MR. HALE: That's essentially correct.

MR. LIVERMORE: I think I might add to that, I don't want to go out and say we didn't care why on anything. I want you to understand that.

MR. ROISMAN: I meant in terms of the job description that you had in your responsibilities in the SSER.

MR. LIVERMORE: We assumed that he did his job correctly to the best of his ability and all we did was take at face value his output.

MR. ROISMAN: And the output we're talking about, you took the finding output, not the conclusions output.

MR. HALE: Well, "finding output" to me refers to a specific part of the assessment, the individual assessment. We looked at it for QA/QC, potential problems. We usually did not deal with the issue that one of the other groups was assessing.

MR. ROISMAN: Maybe this is atypical, but what is at least of interest about this example is that this example -- and by "this example" I'm talking about the testing in SSER number 7 -- produced a "no action required" conclusion, a conclusion essentially that the allegation was not confirmed. That is, the alleger's claim that management had a certain attitude is not confirmed but in the course of their investigation, several discrepancies in the applicant's implementation of FSAR commitments was confirmed, and it appears that what you did -- and I'm trying to understand that this is something you would do -- was I sort of said, well, it doesn't really matter for purposes of our SSER whether that SSER thought action was required, whether that SSER thought the alleger's allegation as stated was valid or not. What we found in the SSER was a discrepancy that has an implication for QA/QC and we take that and put it into our SSER.

MR. HALE: The source of both items on page P-12

references a page in that SSER that it came from. That may or may not relate to the subject you're even speaking of. I don't know; I'm not that familiar with it, but these are items taken from that. As I and Mr. Livermore both stated earlier, they may not be completely correct, but they are the way we perceived them to be when compared to a potential QA or QC problem.

MR. ROISMAN: What it appears you did here, the page I was looking at with you before was sort of the -- was the underlying or the overriding allegation of management attitude which evaluated for management attitude the two deficiencies identified in testing that had been identified in another part of that SSER. You looked at the one that has the finding that dealt with the original deficiency and not in the management attitude implication. Did you at any time look at findings that were made in the other SSERs where it was said "no problem"?

In other words, several pages of discussion and it concludes, this is not a deficiency and make a judgment as to whether you thought in your opinion maybe it was a deficiency and ought to be included in SSER 11?

MR. LIVERMORE: Would you ask that again?

MR. ROISMAN: In a number of places in the SSERs after investigation has concluded that there's no deviation from procedures and everything was fine, did you ever after

looking at that independently decide to reconsider and see whether you agreed that there was not a problem, or did you automatically exclude from the group that you were going to put into your appendix P any case where a prior SSER had said there was no problem?

MR. LIVERMORE: To answer what you're asking, we took again at face value any quality concern identified by one of the other SSERs, but now part of our function when we viewing that SSER, if we saw anything that we considered a quality concern, we would underline it, pull it out, whether or not the other group said it was a quality concern or not. This is what we tried to do. Again, we're not perfect. We may have missed something. Who knows? Cliff reminded me I think we did go there and review some areas that were quality problems and pull them out and put them in ourselves. I can't give you examples, but I know I reviewed some of the areas myself and so did Cliff and so did the reviewers. There was a lot of overlap.

MR. SHAO: May I say something in in my area? When Herb put it out, our group and his group had an agreement. I don't know about other groups. In the civil structure area the QA group and our group had an agreement.

MR. LIVERMORE: What I think Larry is saying is that we did work together in a coordination and what happened, the SSER in this section, even after we pulled

all these out and wrote them down, it was reviewed by Larry's group, Jose's group, all the other group leaders. Every one of these bullets, so to speak, was reviewed by these people for content, form and content, and any comments they wanted to talk to them about. It wasn't a case of we did it by ourselves to start it off, and they certainly had an input in all of it.

MR. ROISMAN: As I understand it, the input was they looked at what you included. It didn't as far as you know include a determination as to to whether you had improperly excluded something.

MR. LIVERMORE: The input was ours, and there were some inputs that came from them. I guess I'm not sure what you are saying about this excluding.

MR. ROISMAN: Let's say that when Mr. Shao looks over appendix P he looks for issues in his area, and it doesn't appear what you are saying -- Mr. Shao, did you look to see if they had included all of the things you thought they should have included?

MR. SHAO: Yes, I did look.

MR. ROISMAN: Whether they included the right things --

MR. SHAO: Or missed something or --

MR. ROISMAN: Okay.

Now, was any part of your responsibility under

the directions that you operated under to identify the root cause of a QA/QC related failure -- and I don't necessarily mean by root cause the one absolute all the way back to the beginning of time, but did you ever have to answer the question why, why did this happen?

MR. LIVERMORE: Let me start at the beginning. You go back to our guidance summary, the review team guidance You won't find the word "root cause" in there at all. But it's inherent in this in that we were told to look -- I'll read a couple of statements here: "Respond to the allegation, evaluate the results, consider generic management implications." And the last statement I read before, we go all the way to QA program effectiveness. Now when we addressed an allegation in our work, the "why," I'll call it, not the root cause, the why in our area, a great number of cases, it was the natural result of the investigation or inspection of the allegation. It is inherent in the inspection process. You get your arms to an allegation, you go to the extent you feel necessary to gather all the data points, to complete your investigation, make your observations. Now that is part of the inspection process.

Now, we go through our SSER. In section O you'll find a lot of cases where we did get into root cause. There was nothing ever said, everybody has to go to the

root cause. If you go through an inspection process, the root cause usually comes from appendix P, criterion 16, you address a problem head on, get all the information about a problem and then normally write a vital or an open item or whatever you do, and then the normal inspection process is the licensee comes back and when he comes back he has to address the root cause or the corrective action, and when he does that then you measure him on that.

If their corrective action is not correct then you address that again. It is a follow-up thing. This dividing line, I don't think you can mix both, but let me go back in our SSER that we did.

There were some examples, take the one where the documentation problems with the DCC that was identified by everybody. Everybody knew it. It was a recurring thing and kept being identified. It became very obvious the why to that was that there was a poor program for getting action on a corrective action. This was identified. We went further than that, went into it, and what happened, when finally management knew of this because they were getting the corrective action -- but when they finally did take action, the problem went away. The why there was you had a poor corrective action since it wasn't being implemented, and secondly, management wasn't acting on it so inherently we came to the why.

In section 0 we talk about 0112 and in that case we mentioned the root cause. That again was following the exception to the rule clause. I think there's a lot of details and you can read it, that type of thing. There was a problem with the valve internals during our inspection process. The why came out of that. There was no doubt about that. That was a recurring problem again that everybody knew about yet it kept happening so the corrective action system was very ineffective. That was the why there. There are other cases where we have write-ups where we don't have the why.

That's part of the inspection process. We felt we went far enough to identify the problem, lay it out to the company. The example was the fab shop. We never go into backup and say what was the real cause, did it go back to some guy who was way back in the warehouse somewhere. We didn't feel we needed to. We identified all the problems and weaknesses, et cetera, at that point. So again it was a call thing. We didn't feel it was necessary to go any farther at that time.

MR. ROISMAN: That's an excellent answer. I appreciate that.

Did you perceive that when you were asking the utility to be responsive either in a place where you had identified what you thought was the why or whether you had

left that open, that among the factors that they were supposed to be evaluating for determining why was whether, as we've indicated earlier, whether the problem lay in management itself, in its approach to dealing with safety problems, did you perceive that answering the question why could go as far as to find that their approach was wrong?

MR. LIVERMORE: I guess -- let me just read the answer here in 0-9 where we talk about -- page 0-9. For the record, that's the very top paragraph, second line. It says, "In addition, TUEC was requested to submit to the NRC in writing a program schedule for completing a detailed and thorough assessment of the QA issues presented that would address the root cause of each preliminary finding and its generic implications in safety-related systems, programs or areas, address the collective significance of these findings and propose an action plan."

My main thing is we do come out and say, you shall address the root cause of all these findings? Did that answer your question or wasn't I detailed enough?

MR. ROISMAN: I want to know whether when you put that question to the applicant do you want them to find the ultimate why? If you discover, for instance, that the -- let's take the example of the corrective action program -- you discover that their corrective action program was not being implemented. That was one why. Why didn't the

problems in the DCC got corrected? Because when they were identified no one made sure the corrective action program was implemented.

Then you went another step and you discovered that management never seemed to get on top of, didn't seem to be plugged into the collective action program, so they could use the power of upper management to say fix it and fix it now. Would you contemplate that the applicant should also find out whether the reason that management didn't get on top of it was because management had an attitude about corrective action that was the wrong attitude, or will you be satisfied, consider it satisfactory and stop with the knowledge it was within management, but not the knowledge as to why they did it?

MR. LIVERMORE: I think what you're --

MR. NOONAN: What you're now getting into is an area that's the future. What we decide to accept or not accept is something we have to wait until we see the answers.

MR. ROISMAN: Surely you're not saying you wrote the applicant all these SSERs and told them to respond and had no idea in your head what kind of response would be adequate. You don't mean to tell me that, do you?

MR. NOONAN: No.

MR. ROISMAN: That's all I'm asking. Did you

generically throw out as the relevant response a response that would go all the way to Mr. Spence and say, you are the source of the problem? Did you throw that out and leave that as something they never had to deal with?

MR. NOONAN: At this point we have not thrown anything out nor have we made any final decisions.

MR. ROISMAN: All my question to Mr. Livermore was, do you contemplate that if necessary they should have to go all the way back to Mr. Spence and say, you, mister, are the source of the problem, you have the wrong attitude?

MR. NOONAN: The thing you are asking is basically an agency answer, not an individual answer. Mr. Livermore is free to give his opinion, but I tell you now that it depends on what we get from the applicants on how we respond to that particular issue as the agency.

MR. ROISMAN: I'm not asking you about response. I'm asking you about surely you have intended that as soon as the applicant -- let's take it from an earlier discussion of a hypothetical. You find an instance in which a particular inspector has not carried out his procedures properly and you check and you discover that he was not properly trained. This guy did not seem to know what he was supposed to do, but when you go back to find out why he didn't know what he was supposed to do, you found out that he always slept in the training session.

The session was a wonderful session. Anybody who was awake would have learned everything they needed. I assume at that point you can say, we've closed off the answer to the question why. We now know the answer. The answer is this guy was a sleeper.

MR. NOONAN: I'm not arguing with you. When we get the answer from the applicant we'll respond to it. The agency, not individuals, the agency.

MR. ROISMAN: I'm aware of that. I'm trying to understand whether the agency has a predisposition to say that when you go as far back as Mr. Livermore on his own went in his group with regard to why did failures detected in the process in the DCC never get corrected to determine that management didn't get on top of the implementation of the corrective action program, is the agency generically decided and is that built into this question to the applicant, you don't have to go any further? Don't find out where management didn't get on top of it? That's what I want to know.

MR. NOONAN: That's a long question, but you have my position. I'm not going to argue anymore. I told you what my answer was. I told you what my answer was. I'm not going to argue.

MR. LIVERMORE: May I speak for one moment? The normal inspection process for an NRC inspector would be to

identify these items in noncompliance or whatever, then forward them to the licensee and say, all right, now we want your corrective action. There's one thing we don't do there and one thing, I don't ever try to tell him what to do. I don't want to say you shall do this and this and go all the way up to management, and th reason is two-fold. First, it is their responsibility, and second of all, it gives us a means to measure them when they come back on their answer and that's exactly what this is. We have gone to them and said you do it, we want your answer. Then we will decide whether you went far enough or not by our review, and at the same time we'll be able to measure you, so that's what normally happens.

MR. ROISMAN: And at least you don't rule out the possibility that they won't have given you a satisfactory answer until they go all the way back to why didn't you pay more attention to this?

MR. LIVERMORE: I can't postulate but I would say I certainly expect an acceptable answer.

MR. NOONAN: For the record, we're not ruling out anything at this point in time.

MR. CHANDLER: Also understand when Mr. Noonan speaks of the agency, he is project director for Comanche Peak and can speak for the Staff.

MR. ROISMAN: He's not speaking for the

Commissioners?

MR. CHANDLER: Not yet.

MR. ROISMAN: This is a shock. They assured me personally that he was.

MR. CHANDLER: In that case, I stand corrected.

MR. ROISMAN: Now, in your understanding of these terms, the concept of a root cause, is this a different idea than the concept of a generic implication? Are those two different things?

MR. LIVERMORE: Yes, I would compartmentalize or divide them. Generic implication would be one you want to look further at. Is it happening in other areas? What we were given in here, states in our marching orders somewhere that we are to look into the allegation and develop the umbrella concept. This is put forth by Mr. Ippolito where you look at generic implications, which means you look beyond the initial thing. You look in other areas.

MR. ROISMAN: Now, was it your responsibility to find the generic implications of all of the deficiencies that you identified?

MR. LIVERMORE: The TRT guidance summary in paragraph B-7 gave us our marching orders, says consider generic/management implications. What that means is during our inspection process, that yes, we certainly keep that in mind while doing our inspection process. If we run into

that it was their standard practice that if there was a wrongdoing allegation, then they would refer the wrongdoing aspect of that allegation to the OI and that they would look at technical aspects of it. Was that also the operating procedure that you used?

MR. LIVERMORE: The operating procedure that we were specified to follow was any time you came upon a wrongdoing, falsification, intent to defraud, wrongdoing, that intent is to notify Mr. Ippolito immediately, who would handle it from there, take it to OI. My instructions were to contact to him immediately, lay it on him. Pass him the football, so to speak.

MR. ROISMAN: Is the allegation of harassment intimidation or pressure on inspectors to keep them from reporting safety problems what you would consider a wrongdoing allegation?

MR. LIVERMORE: The same instructions held true, any intimidation harassment it went immediately to Mr. Ippolito.

MR. ROISMAN: SSER 11 doesn't purport to give us conclusions, from your perspective, as to whether a cause or the cause of any similar deficiency was the existence of harassment intimidation or improper pressure.

MR. LIVERMORE: I'm not sure what all that said. We did not address harassment issues and intimidation items

specifically.

MR. NOONAN: Mr. Roisman, just very briefly here -- we're at 4:00 and we still have not covered the structural items that Ms. Garde said she wanted to talk about. Just a reminder to you.

MR. ROISMAN: I can do it either way. I'm not going to finish with Mr. Livermore between now and 5:00. I'll do it but I'll go on and finish as much as I can.

MR. NOONAN: It is up to you.

MR. ROISMAN: Mr. Livermore, can you put the role of QA/QC into a context for me as you perceive it? What is it that QA/QC's function is at the plant, so that I can better understand what are the generic implications of some of your findings.

MR. LIVERMORE: Let me ask you to be more specific. Are you talking about the role of the TRT QA/QC group?

MR. ROISMAN: No, I'm talking about the role of QA/QC in the building of a safe nuclear power plant.

MR. LIVERMORE: The only thing I will quote was 10 CFR 50, appendix B, the introduction number 8 where it specifies just what QA is. Says, "Quality assurance comprises all those planned and systematic actions necessary to provide adequate confidence that a structure, system or component will perform satisfactorily in service."

MR. ROISMAN: And is it your understanding that QA/QC is the sole way to have that confidence? That's what it is there for?

MR. LIVERMORE: QA/QC, quality assurance -- say that again, please.

MR. ROISMAN: Is QA/QC the sole way to get the confidence that the plant has been built safely?

MR. LIVERMORE: No, it is not. I've often said you can't separate quality from the plant it has to be in. Everybody is involved in quality. Quality assurance is the responsibility of management and every group within the plant.

MR. ROISMAN: But by that you mean that everybody, not just inspectors, are supposed to be concerned with building a quality plant.

MR. LIVERMORE: That's correct, from the top down.

MR. ROISMAN: In the course of your evaluations -- and I realize that you indicated before that you had a biased sample -- you looked at allegations of wrongdoing. Did you find any instances where the applicants had done more than was required by the regulations?

MR. LIVERMORE: Excuse me while I confer.

(Discussion off the record.)

MR. LIVERMORE: If it is appropriate, I'll pass

this to Cliff.

MR. ROISMAN: You can do that any time.

MR. HALE: I think of course usually as any review like this, or inspection, you're not looking for the good things, you're looking for the things they missed on. So you don't document those things that they are doing over and above the requirements but you look at where they are not meeting requirements. There are some that I can think of that would probably fall into that category, but we didn't look for that. That was not what we were there for.

MR. ROISMAN: Looking on page P 27, you discuss in the first paragraph, 4.1, the fact that DCAs and CMCs accumulated against basic design documents with no program requirement for their timely incorporation into the drawings. Did you evaluate what the implications of that practice were for the plant's construction?

MR. HALE: Not as a part of our assessment.

MR. ROISMAN: In the next paragraph, you say that there you found examples of ineffective interaction among the engineering, construction and quality control groups. Did you evaluate the implications for construction of that ineffective interaction?

MR. HALE: These conclusions are just, I guess, a summary of what the findings were in SSER 11, as well as the other SSERs. We were taking it -- as we discussed

previously, the different groupings of what we felt were the QA/QC issues. These were the kinds of summary conclusions that we came up with.

MR. ROISMAN: My question was, given that yours was the group that did see the larger picture, to what extent did you attempt to assess the generic implication of a conclusion that the documents from which the plant was being built, to look at the one in the first paragraph, had been burdened with what you perceived to be an excessive amount of design changes and CMCs from what they should have had?

MR. HALE: The CMCs and the DCAs, the burdening of those, as I recall, were not a part of the consideration of the statements made in that next paragraph.

MR. ROISMAN: That's right. I took you back to the first paragraph and then I'll take you to the second one. You got a lot -- if you have a document you're supposed to be using to build a piece of the plant with this document and attached to the document is 40 changes and no one has gone back and redrawn the original plan and integrated the 40 changes in, I assume that it is not disputable that at least it is more difficult to construct from that than it would be had they integrated it into one.

MR. HALE: There's opportunity for more problems created by that environment, yes.

MR. ROISMAN: Did you attempt to actually assess and give an opinion in this document or intend to give an opinion of the implications of that for the construction of the plant?

MR. HALE: Are you talking about the DCAs and the CMCs now? I did not attempt to do that.

MR. ROISMAN: Is that one of the things that you are expecting the applicants to do when you have told them, we want you to address our concerns?

MR. HALE: That could well be a part of their assessment with respect to root cause.

MR. ROISMAN: Also their assessment with respect to generic implication; is that right?

MR. HALE: Yes.

MR. ROISMAN: Now, in the next paragraph, you indicate "NCR dispositions by engineers were sometimes poor in judgment, lacking in analysis and in technical data." Do you have a judgment as to how widespread that problem was? Either as a percentage of what you looked at or as a percentage of the plant?

MR. HALE: I think we feel like this occurred more than once, and I do not recall how many times. How widespread it was is the kind of information that we are seeking.

MR. ROISMAN: Back from the applicant?

MR. HALE: Yes.

MR. ROISMAN: In the next paragraph, you indicate that there was a failure of the design process to require Gibbs & Hill to review designs and modification of pipe supports prior to fabrication and installation. Did you attempt to determine why?

MR. HALE: As I recall, with respect to this statement, the pipe support drawings were not Gibbs & Hill's principal responsibility but that of the support vendors. So Gibbs & Hill would not be required from a programmatic standpoint to do the design verification; however, in changing some supports, this could change to where some supports could affect other Gibbs & Hill drawings, and seems as though that was the flavor that was coming out of that, that Gibbs & Hill was not as involved in that process as we felt like they should have been.

MR. ROISMAN: Not involved enough to detect when one of their designs might be being affected by a pipe support change?

MR. HALE: We found in some cases that was true.

MR. ROISMAN: At the end of this overall paragraph 4.1 the sentence is included that says, "A more comprehensive assessment of this design process will be included in future SSER supplements dealing with the NRC's findings from the independent SIGNA assessment program."

Do you know or -- this is probably for Mr. Noonan -- can you give me any insight as to what the status of that process is and is there still a planned SSER supplement planned based on the SIGNA audit?

MR. NOONAN: The SIGNA work has not been completed by the Staff. I have not set a schedule to talk to them mainly because of the things going on at this point in time. I do plan to address the SIGNA issues, and whether or not I put out an SER in that particular time is a question to be resolved. It could be something. I'm not sure you'd call it SER.

MR. ROISMAN: This statement may not be accurate as far as a future SER supplement?

MR. NOONAN: It is possible.

MR. ROISMAN: Was it your understanding, Mr. Livermore or Mr. Hale, that the subsequent SIGNA independent assessment program and the NRC's review of that were going to be addressing these root cause, generic implications kinds of questions which you have identified as needing to be answered in the design process area?

MR. HALE: No, it was not our understanding.

MR. ROISMAN: You understood that those would come directly from the applicant through this CPRT effort?

MR. HALE: My understanding of this additional effort was going to be a technical assessment as well as a

broader and more in-depth look at the design quality assurance process. That was what my impression was.

MR. NOONAN: Can I respond? All the SIGNA issues are treated as external issues in the CPRT and responded in that method. Treated as external issues. The Staff work is considered external issues for the CPRT. It is things that they do not find themselves.

MR. ROISMAN: It is input to the CPRT.

MR. NOONAN: They will address those.

MR. ROISMAN: On page P-28 the statement appears, "The TRT QA/QC group concludes that although many of the document control inadequacies have been corrected, the implications of past inadequacies on construction and inspection have potential generic significance which has not yet been fully analyzed by TUEC." Did you attempt to do any analysis of the generic significance of the past inadequacies in this area?

MR. HALE: A very small amount, and were not successful in that.

MR. ROISMAN: So this was one of those places where, trying to follow the trail as Mr. Livermore described, it just wasn't really possible within what the scope of your work was?

MR. HALE: It did not seem to be beneficial for us to pursue it.

MR. ROISMAN: Under the training and qualifications paragraph, the very next one, there's a reference to "The TRT QA/QC group found a pattern of inadequacies with the training certification and qualification." What do you mean by the word "pattern" in that context?

MR. LIVERMORE: What paragraph again?

MR. ROISMAN: 4.3 on page P-28, the first line.

MR. LIVERMORE: I don't think there's anything magic about that. We found a whole series of them, or whatever other synonym you could use for that word; you put them all together, they are on the same subject.

MR. ROISMAN: My question was intended to find out whether you thought by using the term "pattern" that they might have a common cause.

MR. HALE: There was commonality in some of the items we found in the different training programs.

MR. ROISMAN: You mean the same kind of deficiencies?

MR. HALE: Yes.

MR. ROISMAN: So what you are talking about is the pattern only to the extent that the deficiencies were similar, not necessarily the causes might or did look similar.

MR. HALE: We really didn't try to assess the

cause. Some seem apparent, but those that are apparent many times can be deceiving.

MR. ROISMAN: In that paragraph, you put into quotation marks this phrase, "minimal requirement training"; and later you discuss on page P-29 the exception to the rule, and use of other factors as a qualification method. Now, you will remember earlier today when we talked with Mr. Keimig, we discussed an allegation in the testing area that one way of framing it might have been to call it a minimal requirement approach to testing; that is, that the applicants whenever they had the opportunity did the bare minimum and didn't -- produced the least conservative approach to some testing program.

Accepting for a moment that that characterization of Mr. Keimig is correct, did you in this SSER, attempt to look for those kinds of possible connections to see whether there might be a whole class of deficiencies that looked like at least the first answer to the why was an effort to use the minimal requirement?

MR. HALE: No, we didn't look for those types of occurrences. I think in the case of Mr. Keimig and in this case, there was still compliance with the requirements, but in this case, and perhaps in the one Mr. Keimig was discussing, the problems that appeared to be having in those areas, these kinds of things could have contributed

to those problems occurring. And I think that's the sort of thing that this certainly is intended to present. Perhaps a causative factor.

MR. ROISMAN: Again, this sort of final pulling together was still something that you are expecting the applicants to do subject to your review and input and response?

MR. HALE: If those are the actions that are necessary to correct and prevent recurrence, yes.

MR. ROISMAN: Well, at the bottom of page P-29 you use the phrase "first level supervision." Can you just explain the phrase a little bit? What does that phrase mean?

MR. HALE: That's I think intended to mean the first level of supervision within an organization, inspector --

MR. ROISMAN: First up or the one at the top?

MR. HALE: First one from the bottom.

MR. ROISMAN: I wanted to be sure I understood that.

Do you assume in this section on construction and testing section that there's a certain amount of construction deficiencies that will go undetected even by a properly implemented QA/QC program? Is that an assumption -- the reason I ask that, why would you be concerned with

craft construction inadequacies if QA/QC is supposed to pick up all the problems anyway?

MR. LIVERMORE: Well, you don't expect -- you do not inspect quality into the systems after the fact. Quality is expected to be built in by the crafts people.

MR. ROISMAN: Maybe we ought to take a few minutes. That's one of those phrases like "quality is job one." It has a nice ring to it. I don't know that I understand exactly what it means.

I take it the reason we have a QA/QC program is in order to produce two things: One, a group of people to make sure that it is being done right; and two, a group of people who are sort of policemen to make sure that the people who are supposed to do it right know there's a consequence if they don't.

MR. LIVERMORE: That's one of the many steps along the way to assure a correct and quality product. You have design, you would have the correct materials, the correct inspector. This is another step along the way to insure a quality product.

MR. ROISMAN: In that sense you do inspect quality into the plant in that the inspector plays a role in assuring that there's quality there. He didn't actually weld, but he makes sure it is done right.

MR. LIVERMORE: That's correct; he does inspect

as a step along the way.

MR. ROISMAN: Looking on page P-30 under paragraph 4.5, subparagraph A, the first line says "The B&R corrected action system was generally bypassed." What do you mean by "generally"?

MR. HALE: This is a summary of course, and summarizes the findings of the QA/QC group and also the other groups, and I would hope that 1 and 2 under that would explain the general nature of those.

MR. ROISMAN: Well, you must realize why these terms, "generally," "plant-wide," "system-wide" -- I'm trying to get them into some context that means something in terms of licensing. Do you mean by "generally" of all the ones we looked at we generally found it was true? Do you mean that we looked at so many that we can say that generally throughout the plant it was true? That's what I'm trying to understand when you use the term "generally."

MR. LIVERMORE: I'll try to answer that. I don't think there's anything magic about that. What we were trying to portray in that is that we found it was bypassed in the slice of time we looked at, on numerous occasions, but we were not positive it was bypassed all the time, for want of a better word. That's what went in.

MR. ROISMAN: Still looking at paragraph 4.5-A 1, now looking at subparagraph 1, reference is made to the QA

manager. Are you talking about the site QA manager; is that who you mean to reference there?

MR. HALE: As I recall, that's correct. However, we are talking about the Brown & Root corrective action system. I believe that that is the site QA manager we made reference to.

MR. LIVERMORE: The Brown & Root site QA manager.

MR. ROISMAN: You meant to refer to Brown & Root's site QA manager, not the overall manager?

MR. HALE: Yes, the Brown & Root. This system that is discussed there is not to be confused with the nonconformance system. It is a corrective action system.

MR. ROISMAN: I understand that. In paragraph 2, here again you are discussing a shortcut process -- that is your word -- that was used by Brown & Root since June of 1983. Did you make any attempt to determine why they were using a shortcut route?

MR. HALE: It seems to me that we did try to determine whether or not procedures were violated in using a method other than the CAR system to affect these corrective actions. As I recall, we did not find any procedural violations in this area.

MR. ROISMAN: Now at the end of this 4.5, you indicate your group found B&R and TUDCO's corrective action systems poorly structured, ineffective and poorly applied.

Now, are you intending to refer there to the process of dealing with NCR-identified problems not with the process of the NCR itself? I'm confused with the systems.

MR. HALE: The statement seems to embrace the NCR system as well as the corrective action system. The statement probably would more appropriately be addressed to the corrective action system.

MR. ROISMAN: Now in the next paragraph -- that's 4.6 on page P-31 -- the second sentence says, "Of particular concern were those items for which QC inspection was indicated as being primarily responsible and having a generic impact level of 4 (frequent occurrences that have plant-wide impact)." In the context of that statement, what do you mean by "plant-wide impact"?

MR. LIVERMORE: Would you lead me back to where that came from?

MR. ROISMAN: Second sentence of the first paragraph under 4.6.

MR. LIVERMORE: Again, that's in the same context we spoke about before as within the purview of the technical review team only.

MR. ROISMAN: It is not intended by that statement to be any implication for portions of the plant that were not the subject of the TRT investigation?

MR. LIVERMORE: Again, that would be making a

postulation that was not within our function, so I did not make that.

MR. ROISMAN: Did you prepare any other explanation of your use of the generic impact column designations 1, 2, 3, 4 and indeterminate beyond what appears in P 26 of SSER 11? Are there some backup documents to that?

MR. LIVERMORE: No.

MR. ROISMAN: Did you discuss the development of this ranking system among yourselves?

MR. LIVERMORE: Yes, this was again, an integrated elective-type discussion within our group, and we had a meeting in trying to figure out how to attach an importance of some kind. We could have a chart with a whole group of numbers and everybody would say so what. We tried to attach some method of importance to it.

To answer your question, this was all discussed with our people. It was also part of the management chain also. Other group leaders reviewed this document; we did have a preliminary meeting with the group leaders, and a group of people discussed how we were going to address this area, and so I guess I could say in answer to your question, yes, it was a collective-type decision.

MR. ROISMAN: But to the best of your knowledge no one made any notes or there are no memoranda of any

meeting that discusses -- I'm particularly interested in discussions about what you intended by the various category numbers; that is, what you meant when you said "plant-wide."

MR. LIVERMORE: In answer to your question, no, there were no notes to the meeting, no memos. It was just part of our process of producing.

MR. ROISMAN: Mr. Hall, would you give me your understanding of what is meant -- and let's just use it in the context of the sentence in paragraph 4.6 on page P-31 -- of what is meant by the phrase "frequent occurrences that have plant-wide impact."

MR. HALE: I don't believe I could give you any different description than what Herb has just described. We worked very closely with one another on this, and we were trying to place some kind of importance and it was really very judgmental. The placement of the impact numbers as well as even the category under which the hit, as we've called them, would have fallen. In some cases it was almost a tossup, whether it was a poor procedure or poor craftsmanwork or a deficiency from an engineering assistant, so I would like to make this sound very scientific, but it was just a help of sorts, so that we might get some better view of the total QA/QC picture from the standpoint only of what the TRT was doing, and is for our management as well as the other team members.

MR. ROISMAN: Was it -- as it was with Mr. Livermore, was it also your view that if you said of some problem that it had a plant-wide impact, that that did not mean that it had implications for other parts of the plant that TRT had not investigated?

MR. HALE: I believe that the phrase may indicate frequent occurrences that appears to have plant-wide impact. I think what is meant that it could occur elsewhere. This type of item has the potential for existing in other areas that we did not look at.

MR. ROISMAN: Mr. Livermore, is that your understanding? Maybe I didn't put the question right. What Mr. Hall just said, that it appears that it could have impact in areas that we did not look at, is that what you mean by that phrase?

MR. LIVERMORE: Excuse me a second.

(Discussion off the record.)

MR. ROISMAN: Would you read back his answer.

(The reporter read the record as requested.)

MR. ROISMAN: Mr. Livermore, do you agree with that statement?

MR. LIVERMORE: To an extent I would say anything is possible, and I believe that's what he said.

MR. ROISMAN: The members of your group who are here, do any of you disagree with Mr. Hale's statement that

the reporter just read back as to what you understood, not what he understood, what you understood by the term "plant-wide impact"? Can I assume that since I hear no one saying anything that you do not disagree? That would be your statement as well? Okay.

Now, on page P-32, really starting at page P-31 and continuing on, there's a discussion of your findings with regard to the auditing program at the plant. I wonder if you can tell me, what are the implications for the plant of your conclusion -- that's really in the middle of page P-32 -- "that TRT determined auditor staffing and qualifications to be questionable, which rendered the audit results for 1981 through 1983 potentially ineffective." If the audit results for 1981 through '83 were actually ineffective, what are the implications of that, as you understand it, for the plant?

MR. HALE: I don't believe we attempted to draw any conclusion with respect to what the implication of this might be.

MR. ROISMAN: Is that also true for the statement on page P-33, the bottom of the first full paragraph, "TUEC represented it stated that there had been no regular assessment or reviews of the adequacy of the total QA programs by upper management as required in appendix B and as committed in the FSAR." You did not look

at the implications of that for the plant?

MR. HALE: It is an observation that we made and I think we presented it as something that we factually observed or were told and did not draw any conclusions from that.

MR. ROISMAN: Now on page 34 at the very top of the page in your conclusion on the audit, at one point you talk about the past system being "less than adequate," then you talk about the system in effect at the time of the review was "questionable." Are those intended to communicate two different levels of findings, "less than adequate" being one, "questionable" being the other?

MR. HALE: I don't believe so. I think what it is saying is that we looked more at what had occurred than what was going on at the time. If that makes very much sense.

MR. ROISMAN: In other words, are you saying you didn't look enough at the current program to say conclusively that it was less than adequate, but you saw enough of it to think there were questions about it?

MR. HALE: No, I think that it is more intended to mean that we didn't look at it enough and perhaps some of the other things, such as corrective action system weaknesses, may cast a cloud over the current audit system.

MR. ROISMAN: Did you find that the problems in

the past audit reporting system, that any of them had been corrected by the time you were looking at it in 1984?

MR. HALE: One difference I do recall is the staffing of the audit program or the audit group had been increased.

MR. ROISMAN: What about the qualifications of those people or did you look at that?

MR. HALE: If we did, I do not recall.

MR. ROISMAN: At the bottom of page 34, "overall assessment and conclusions," you again make the statement that -- you, Mr. Livermore, have taken this tack several times -- "that the scope of the TRT review and inspection was limited to the QA/QC concerns raised by the allegations." But as I understand it, when an allegation led you to the normal natural course of things to look at something that wasn't itself specifically alleged, you did go ahead and take a look at that; is that correct?

MR. LIVERMORE: That's correct.

MR. ROISMAN: And it was really your judgment that made you decide when to stop and when to go on rather than some set of written criteria that you operated under; is that correct?

MR. LIVERMORE: I would say that's correct.

MR. ROISMAN: Now, in the next sentence, you say, "Appendix P focuses on problem areas that need further

identification." "What do you mean? What are you saying by that phrase, "further identification"?

MR. LIVERMORE: Excuse me while I find my place here.

MR. ROISMAN: We're still in the overall assessment and conclusions, bottom of page P-34.

MR. LIVERMORE: I think that what we had intended there was that appendix P, that we've just gone through, which is a grouping of all the items from the other groups, certainly focuses on problem areas here identified. We say they certainly do need further identification in preparation of our corrective action plan, et cetera. This is what I'm talking about when I refer to TUEC.

MR. ROISMAN: By "further identification," you mean a further look to find other deficiencies or did you mean to actually go and locate new problem areas?

MR. LIVERMORE: Wherever the normal inspection process would take them, in other words, to perform a beneficial and acceptable corrective action program they would certainly have to investigate to their fullest, root causes, et cetera.

MR. ROISMAN: Did you expect that that look would be limited to looking at the matters that were brought to their attention by the TRT and the natural

outgrowth of that or were you intending to say by that something more?

MR. LIVERMORE: We were saying we presented them with these things from our limited outlook, and then they would certainly be required or we would expect them to follow. Where there's smoke, there's fire, as we said before.

MR. ROISMAN: Mr. Hale, did you want to say something?

MR. HALE: No, I would have said the same thing differently, I believe. All we would expect them to do is respond to those things which were found, wherever those led them. I think it is the former statement you made. Just responding to the TRT findings, pretty much as we stated on the last page of P, the next page, where those investigations or studies took them, we would expect them to explore those. If the findings we made did not lead them there, I don't think we would expect them to look there.

MR. ROISMAN: So that to understand, sort of, the pyramid structure that you saw, if we start with the base as being allegations, which represent the boundaries of the TRT, from that the TRT produces the next level up in the pyramid, which may not be a smooth line, because the allegations may, in the normal course of things, have

caused you to look a little broader, but you still started with those allegations. Now we get a TRT which is like NRC allegations, and the applicant's look is to be from -- you intended in these statements to say, you look at the TRT and follow what that directs you to. You are not expecting them to be looking at things you didn't talk about in the TRT.

MR. HALE: I think all the questions, as opposed to allegations, raised by the NRC is what is being asked for the applicant to respond to. This right here, relating only to the QA/QC issues.

MR. ROISMAN: I understand. In the next sentence you say this identification of problem areas will facilitate the preparation of a corrective action plan. Is that the CPRT? Or is that something other than the CPRT as you understand it, or maybe Mr. Noonan has to answer it.

MR. LIVERMORE: At the time of this writing I don't think there was such a thing as a CPRT. We knew there had to be some type of a corrective action plan, so if that's what the outgrowth of that is -- I think Mr. Noonan can answer that.

MR. NOONAN: The CPRT is where we are looking for all this to come together. They will respond to all this.

MR. ROISMAN: I was trying to know -- we're

getting into lots of terms of art but I understood corrective action plan as referring to the implementation of physical work, and that problem identification was what CPRT did and corrective action plan was what would be done subsequent.

MR. NOONAN: CPLT is what we call the third party. The actual corrective action work will be done by the projects.

MR. ROISMAN: No not the plan, just the work.

MR. NOONAN: The actual work.

MR. ROISMAN: Still staying on this same sentence --

MR. LIVERMORE: We said, their recovery plan, whatever you want to call it. We didn't specify some other thing you had to know about. This was way back in the beginning. We didn't know what else to call it at that time.

MR. ROISMAN: You were contemplating something that included problem identification, root cause determination and fix-it, all under that general rubric "corrective action plan"?

MR. LIVERMORE: It is what we stated on 0-9 and P-36. Those are the things.

MR. ROISMAN: You then, in this last sentence in the first paragraph, 4.9, conclude by saying "which should

provide reasonable assurance that the facility has been properly constructed." What did you mean by the word "should"? If my question is not clear I'll go through some options. Is it not clear? I'm trying to understand what's meant in the last sentence of the first paragraph under 4.9 on page P-34. After saying "that a corrective action plan," it says, "which should provide reasonable assurance that the facility has been properly constructed." What is meant by the word "should"? And if it is helpful I'll give you what I think are some of the options.

MR. NOONAN: I don't think I need that. Thank you. Let me read the sentence, please.

I think all we're saying in that particular sentence, once we receive the final version of the program plan, which the staff will then go back and write a safety evaluation on it, the implementation of that program plan should provide staff with reasonable assurance that the plant has been properly constructed. "Should."

MR. ROISMAN: Are you intending by the "should" to indicate that we're expecting a corrective action plan that is good enough that this is what will be able to be determined from it. Rather than a prediction, you are making a prescription?

MR. NOONAN: I'm saying the implementation should provide that. That should give us reasonable

assurance that they have done their plant construction properly.

MR. ROISMAN: Looking at page P-35 in the next to last -- I'm sorry. Under part E, you make a reference to some craft personnel "appear to be insensitive to QA/QC concerns at times, possibly because of lack of training, tight schedules and excessive schedule emphasis by construction management." What's the basis for that statement?

MR. HALE: These are distillations of the bullets that we picked out of the other SSERs. I can give some references back to some pages where there are kinds of examples that gave birth to this statement.

MR. ROISMAN: Do the documents that we'll eventually see from the FOIA request, do they contain someplace where you reference all the statements or all the portions of the SSERs that would form a basis for that statement?

MR. HALE: No, I think out of the table that's provided, attached to the SSER, and perhaps in the very brief descriptions that we have, for example, under construction testing deficiency types, you may be able to find where those kinds of concerns came from. Let me give you one example, whether it is good or not. On page P-9 and P-10. If you look at AH-4 -- may not be a good example

of that one -- supervisor told a worker to use a piece of scrap material for a hanger installation. It has no traceability. The hanger was removed without QC documentation and disposition. That is an item that would have contributed to the statement we made in there.

And these statements that we are making in the overall assessment and conclusion are the kinds of things that we felt like the content of appendix P was saying.

AC-39 on the next page is an example of a crafts personnel that should have followed design documents and they don't make an attempt to find whether the design document was incorrect or the craft personnel just ignored it and the QC should have verified the replacement. That would get a tick in two different places.

MR. ROISMAN: Those examples seem to be ones from which one might infer an insensitivity. How did you go on to the "possibly" part of the sentence? What formed the basis for your belief that "possibly it was lack of training, tight schedules and excessive schedule emphasis by construction management"?

MR. HALE: It could be any one of those or none of them.

MR. ROISMAN: It could have been a lot of things.

MR. HALE: That's true --

MR. ROISMAN: Why did you pick those three?

MR. HALE: Because they were probables.

MR. ROISMAN: Probables based on what you had learned?

MR. HALE: No, what the text of these were.

MR. ROISMAN: If we went to the full write-up of AC-39? As opposed to the short version that's here in P --

MR. HALE: That's true. Herb just pointed out there could be other examples. These are just two of many in this appendix, but I think when crafts personnel do not follow design documents, one can make several assumptions from there as to why this did not occur, and then when they didn't, why QC didn't identify that when they came along later, and I think that's all this was intended to do.

MR. NOONAN: We have indicated that it is 5:00. At this point in time, if you have a finisher, I would like to do it.

MR. LIVERMORE: Could I add just one thing here? I want to tell you this: When we make these conclusions, our statements, the basis for all these or the facts are somewhere in here. There's nothing hidden anywhere. I guess that's all I'm trying to say. We made it from what's in here, which is appendix P, plus ours and there's nothing floating around that we haven't shown you. You will have this and all our backup files in the FOIA and that's all that's there.

MR. ROISMAN: Mr. Noonan, on behalf of Citizens Association for Sound Energy I want to thank you for making this large assemblage of men and one lady available for the purposes of this meeting, and to say that at least from my perspective, I was very much impressed with their professionalism /ER and the amount of work that went into the documents as well as into the getting ready for these meetings, and we very much appreciate that and understand that it was a potentially stressful experience.

I hope it didn't turn out to be in realtity as stressful as it appeared, but the Staff has obviously done a very monumental piece of work here and we appreciate not only that you took the time to talk to us about it, but that you took the time to do it in the first place.

MR. NOONAN: Thank you. For the record I would indicate that the applicant has stated that he doesn't wish to comment at the end of this session today. With that I do thank all the parties and the Staff. Thank you.

(Whereupon, at 5:00 p.m., the meeting was concluded.)

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING: MEETING OF THE NRC STAFF WITH CASE

DOCKET NO.:

PLACE: BETHESDA, MARYLAND

DATE: WENDESDAY, NOVEMBER 20, 1985

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

(sign) Kathie S Weller

(TYPED)
KATHIE S. WELLER

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