ENCLOSURE 3

NUCLEAR REGULATORY COMMISSION

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MEETING BETWEEN THE EMPLOYEE'S LEGAL PROJECT

AND THE NUCLEAR REGULATORY COMMISSION

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King of Prussia, Penna., Tuesday, December 29, 1987

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A Meeting was held between the Employee's Legal Project and the Nuclear Regulatory Commission at 631 Park Avenue, at 9:00 A.M., on the above date, before Norma Carr, Court Reporter - Notary Public.

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APPEARANCES:

JACQUE P. DURR,
Acting Deputy Director, DRS

DONALD HAVERKAMP,
Project Section Chief

JAMES KAUCHER,
Project Engineer

JAMES WIGGINS,
Section Chief, Region I

DAVID RUSCITTO,
Resident Inspector, NRC

ANTONE C. CERNE,
Senior Resident Inspector, NRC

KAMAL MANOLY,
Engineering Technical Assistant,
NRR, NRC

E. HAROLD GRAY,
Senior Reactor Engineer, NRC, Region I

SHARON TRACY,
Director, Employees Legal Project

DOUGLAS E. RICHARDSON,
Researcher, Employee's Legal Project

MICHAEL GREENSTEIN,
District Director, U.S. Rept. Nicholas Mavroules

MARY BETH GENTLEMAN, ESQ.
Assistant Secretary for Policy
Executive Office of Energy Resources
Commonwealth of Massachusetts

E X H I B I T S

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MR. DURR: Let's open the record. I guess for the benefit of the record I would ask everybody to state their name, their title and address, and who they represent.

I'm Jack Durr. I'm Acting Deputy Director of the Division of Reactor Safety for Region I for the NRC.

MR. HAVERKAMP: Don Haverkamp, Project Section Chief of the Seabrook Plant, NRC.

MR. KAUCHER: James Kaucher. I'm the Project Engineer for Section 3C of which Seabrook is a part.

MR. GREENSTEIN: Mike Greenstein, District Director for United States Representative Nicholas Mavroules. The Congressman represents the 6th Congressional District of Massachusetts. 6 communities within the District lie within the 10-mile EPZ, and that's why we've come here today representing the Congressman.

MR. RICHARDSON: Douglas Richardson. I'm doing research work for the Employee's Legal Project.

MS. TRACY: Sharon Tracy, Director of

Employee's Legal Project.

MR. GRAY: Harold Gray, Senior Reactor Engineer, Region I, NRC.

MR. MANOLY: Kamal Manoly, Engineering Technical Assistant, Division of Engineering and System Technology, Office of Nuclear Reactor Regulation, NRC.

MR. CERNE: Tony Cerne, Senior Resident Inspector at Seabrook for Region I, NRC.

MR. RUSCITTO: Dave Ruscitto, Resident Inspector for Seabrook for the NRC.

MR. WIGGINS: Jim Wiggins. I'm the Project Branch Chief here at Region I for NRC for the Branch at Seabrook. I'll only be here for part of the time. I have other things I need to do.

MR. DURR: With that, I guess I would like to restate the purpose of the meeting, and it was at partially your request that we have a post-inspection meeting to deal with the issues of inspection report 86-52 and 87-07, which dealt with the allegations presented by Employee's Legal Project to the NRC back in November of 1986 and April of 1987, and the purpose of this meeting is to address some additional questions that came from those 2

reports, and this meeting will deal with those issues and those issues only that are in those 2 reports.

MS. TRACY: Could I add something to that?

MR. DURR: Certainly.

MS. TRACY: To that end, I agree with your synopsis of why we're having this meeting. I've put together a proposed agenda which lists those issues which have been deferred until this meeting, and I would like to pass this out to the people here, and also enter it into the record.

MR. DURR: At this point in time I would like to take a look at those first. You submitted to us a letter which contained your concerns back in -- what's the date?

MR. GRAY: November 12, '87.

MS. TRACY: Right.

MR. DURR: On November the 12th you sent us a letter with your concerns and the issues that you had questions about that would be discussed at this meeting. So based on that letter that you sent us we had the appropriate people here, and so I would like to work from that letter, if we could, because everybody is familiar with that. This is a

new piece of information.

MS. TRACY: This isn't new information. This simply amplifies what I put in the letter that I wrote to you, and lists specific issues that we have raised that are mentioned in that letter.

Why don't I pass this out? You can all look at it. I think I have enough copies for everyone. There is 3 pages each.

I would also like to enter this into the record as my understanding of why we're convening here today.

MR. DURR: For this point in time I'm going to lay this aside for now because I see things in here that I do not recognize that were in your letter of November the 12th. We'll come back to this after we've gone through your initial November 12th letter because that was really the thrust of this meeting.

MS. TRACY: Could I look at the letter? Is that what you have right there?

MR. DURR: We have prepared our responses --

MS. TRACY: You're talking about our

response to 87-07?

MR. DURR: Yes. That was the purpose of the meeting.

MS. TRACY: The purpose of the meeting was to deal with procedural questions which have not been addressed in either 86-52 or 87-07.

MR. DURR: The purpose of the meeting was to discuss -- and that's why we requested you to send us in your November the 12th letter your concerns that you wanted to discuss, so that we could prepare and have the adequate staff available for this meeting. That's why I'd like to gear it to your November the 12th letter. I assume the November the 12th letter contains all of your concerns.

MS. TRACY: At the end of the letter, which is our response to your report, I list all the different issues that haven't been dealt with yet.

MR. DURR: I understand.

We'll deal with your November the 12th letter because it should contain all those same things.

MS. TRACY: It should.

MR. DURR: Very good.

MR. GREENSTEIN: Are there any copies

of the November 12th letter?

MR. DURR: There are, but I don't have one with me right at this point. We can get you one.

MS. TRACY: It's the 87-07 response.

MR. DURR: Here. I'd like that back. But for the purpose of the meeting, here's a copy.

With that, the first page of your letter is an introduction, and the first issue that we noted in there was a statement that says, "Biofouling discussed in both the body of this report and in Appendix A is a contention under litigation before the NRC by the New England Coalition on Nuclear Pollution".

That is a new issue. Biofouling has not been discussed in either one of the inspection reports. It is, in fact, under litigation before the Hearing Board, and it was presented by the Interveners. So we will not address that particular subject, other than the fact to say that we have done some preliminary inspections, and to our knowledge biofouling has not been a problem at the Seabrook Plant. But rather than preempt whatever the Hearing Board decisions are relative to biofouling because it is an Intervener contention, we will not discuss that

in this particular meeting. It's outside of the scope of the meeting really.

MS. TRACY: I just would like to point out that microbiologically induced corrosion, according to NRC documents that I've read, does fall under the category of biofouling.

MR. DURR: Not true. They are 2 separate issues. Biofouling is one issue, and microbiologically induced corrosion is another issue.

MS. TRACY: Is caused by biofouling.

MR. RICHARDSON: We have been treating them as related issues.

MR. DURR: We understand that you have, but we would like to point out to you that it's inappropriate to treat those 2 as the same thing because they are different sources, different issues.

MR. RICHARDSON: They are still related.

MR. DURR: I have a technical corrosion expert here, and within the technical community they are 2 separate issues, and the NRC treats them as 2 separate issues.

MS. TRACY: Are you the expert?

MR. GRAY: Right.

MS. TRACY: I am fine with that.

MR. DURR: So the biofouling question --

MS. TRACY: We will defer.

MR. DURR: Because that's under hearing. We would prefer not to discuss that. We will be prepared to discuss MIC.

Your first question in your November 12th response in Section 1.3 --

MS. TRACY: Excuse me, Jacque.

MR. DURR: Certainly.

MS. TRACY: I am concerned about our time limitations today, and I am also concerned that we do get to the programmatic issues which it was my understanding that we were going to deal with. So I would like at some point to have an assessment of how far we've gotten toward dealing with the issues. At some point, say, in an hour or so we can renegotiate perhaps.

MR. DURR: I would like to stay as much focused on your November 12th submittal as we can.

MS. TRACY: I'm referring to pages 17,

18 and 19.

MR. DURR: We will make it to that. I feel confident.

MS. TRACY: Because those were the issues that I felt we were down here to talk about today.

MR. DURR: I would hope that we leave here with no stone unturned.

MS. TRACY: I would be surprised.

MR. DURR: Moving on, Section 1.3, paragraph 3, discusses programmatic weaknesses, poor quality assurance/quality control, technical training, et cetera. (A) under that says ongoing problems reflected in current NRC inspection reports up to October, 1987 show that even if programmatic deficiencies were corrected before 1987, the problems caused by those deficiencies are now built into the plant and are continuing to become evident. The programmatic deficiencies themselves are still continuing and are being dismissed as isolated incidents by the NRC.

We took that as a statement of opinion on your part. Are there any questions with that?

MS. TRACY: These are issues we will deal with later on. These are the programmatic issues.

MR. DURR: That is a statement of opinion on the ELP's part. It's not a question. Is that correct?

MS. TRACY: I would say it's a statement, yes. There is no question mark at the end.

MR. DURR: With 1.3 what are your specific questions that you want answered by the technical staff?

MS. TRACY: Well, you have my list right here. I would say that what is listed here --

MR. DURR: Let's stay with the November 12th document. We are familiar with that. We have read it. We've all reviewed it. We know what the direction of focus for your comments are, and we are prepared to respond to those. So if you could stay with that, it would make it much easier.

MS. TRACY: Okay. Programmatic weaknesses are listed at the end of this report on pages 17, 18, 19 and 20.

MR. DURR: We will get back to those.

Let's take them sequentially, if we can.

MS. TRACY: Sure.

MR. DURR: Is there anything under 1.3 that you would like to discuss now that the staff is prepared to respond to?

MS. TRACY: Do you have anything? You say you assembled your people here today.

MR. DURR: Yes.

MS. TRACY: Does anyone here have something to say about 1.3?

MR. DURR: We've said it all in the inspection reports 86-52 and 87-07. We thought that you had questions concerning these issues.

MS. TRACY: Yes. Quality assurance --

MR. DURR: That's why you sent this to us. Are there any questions under 1.3 that you would like to have the staff address?

MS. TRACY: Programmatic deficiencies related to quality assurance/quality control, document control, design control and training. This is what I wrote up in my proposed agenda for today. If you want to deal with those issues that are mentioned briefly in 1.3, if you want to deal with them now, we can. If you want to wait until we get

back to the Appendices where I list those issues in more detail, we can do that too.

MR. DURR: I think we're having a communications gap.

MS. TRACY: Not unusual.

MR. RICHARDSON: I'll start us off, if you would like.

MR. DURR: Let me explain what I think we're supposed to be doing here. You have specific concerns.

MS. TRACY: Yes.

MR. DURR: Inspection reports 86-52 and 87-07 both dealt with these areas, and as far as the NRC is concerned, it has been adequately inspected and those issues are closed. We don't intend to do anymore on those issues.

However, in your reading of those inspection reports if there was something in there that technically you did not understand or that you would like further clarification on, then I think we are prepared to respond to that.

MS. TRACY: I understand.

MR. DURR: So using those 2 inspection reports as the basis for your questions, what in

there technically did you not understand that you need clarification from the staff on? Because we feel that a technically competent person reading those reports would arrive at the same conclusions. We are essentially the "technical arm" that inspects those things, and we have looked at them and to our satisfaction they have been resolved. So what I need from you then, what specific questions do you have relative to those paragraphs in those reports that you don't understand that you need clarification or amplification on?

MS. TRACY: My point is, Jacque, that particularly dealing with Section 1.3 is that there are programmatic weaknesses.

MR. DURR: Such as?

MS. TRACY: Such as problems with quality assurance --

MR. DURR: Specifics, please.

MS. TRACY: The specifics are written down in the document that I just passed around that we can either deal with now, or we can deal with when we get to where they're listed at the back of the report.

MR. DURR: You should have given us

all that information back in 1986, and we addressed all that information in 1986 and 1987.

MS. TRACY: That's right.

MR. DURR: Specifically, other than a general statement that you feel uncomfortable with quality assurance, what specifically don't you understand?

MS. TRACY: I understand that there has been a breakdown in quality assurance/quality control.

MR. DURR: We can't substantiate that.

MS. TRACY: That's because you have not looked.

MR. DURR: That's not a true statement. It's obvious from the 2 inspection reports that we have looked.

MS. TRACY: Jacque, you have told me in our past meetings that your job is to deal with technical issues.

MR. DURR: It is.

MS. TRACY: If I bring you something and say there are specific welds in a specific area which have been done incorrectly, you will go and attempt to look at them and attempt to see if they're

all right. If you cannot reach those welds physically, you will look at the documentation. That is a technical problem which you will resolve by looking at the technical information.

I have brought you other kinds of information which you have not regarded as being technical information. You, therefore, have not had the techniques necessary to investigate whether these charges are true or not. Those charges which I have generally factored out into falling under QA/QC, document control, design control and poor training have not at any time been addressed to our satisfaction, to resolve them to our satisfaction to say that these were not a problem, particularly with document control.

MR. DURR: Let me answer your question before you get too far on. Let me interrupt you just for a minute.

MS. TRACY: Yes.

MR. DURR: Our job is not to resolve any issues to your satisfaction. They are to resolve them to our satisfaction. That's what our Charter is from Congress. We're the technical experts. I don't know that you have any technical experts on your

staff that have any vast experience in quality assurance/quality control, construction of nuclear power plants. We are the technical experts, and it's our Charter.

No one individual makes that decision. Our allegation process is such that a panel reviews what the inspection team has done, and they determine that that is an acceptable resolution. So if you expect the NRC to "satisfy" ELP, that's not our Charter. Our Charter is to satisfy ourselves that there is no wrongdoing; that the plant was properly constructed, and that's what we have done.

So that's why I wanted to respond to that part because there is a misunderstanding on your part.

MS. TRACY: I don't think so, Jacque. Let me say something. It's my understanding that you all are public servants.

MR. DURR: That's correct.

MS. TRACY: And that ultimately you have to resolve these issues to the satisfaction, not just of yourselves, but of the Congress and of the public.

MR. DURR: That's correct.

MS. TRACY: So in a sense what you just said is not entirely accurate. You have to satisfy the public to the fact that you are protecting their health and safety, not just yourselves, but the public.

I represent, not just the people who worked at the Seabrook Nuclear Plant, but also to some extent the public, and certainly Congressman Mavroules does.

MR. DURR: We have been utterly responsive to everyone's concerns. That is to say, we have spent an inordinate amount of manpower in dealing with these issues. We have had focused, directed allegations presented by you which we have looked at specifically, and we have come up with nothing. In all of these inspections we have not found anything that would indicate that there was bad construction or cover-ups or anything of that nature.

So at some point the NRC has to say we are spending all these efforts, and we are not getting anything in return for it. We don't find any credibility in your statements because we have looked

at your very focused, very specific allegations. Even in the very specific ones we cannot find anything the matter. So at some point in time we have to start saying the credibility of these allegations is such that at some point in time we have to disengage from this.

Now, we do not have to satisfy every single individual in the community that that plant is technically safe. We "satisfy" the public through the process, and that's what the licensing and hearing process is all about. That's where the public gets satisfied. If the public has valid concerns or valid contentions, then the process is set up such that they can be heard. Nobody, other than a few people, have taken that route to present their concerns, and those concerns are being addressed in that forum, and they will be. The process is set up so the public can be heard throughout this whole thing.

Now, when you come in with allegations, that's a different process, and that process says that we will inspect and satisfy ourselves that there is nothing wrong with the plant, and that's we are doing here. Now, if you have other

concerns that you want to run through the other forum, that's where you can be heard. So the NRC, I think, is being very fair in this respect; that we are taking the concerned citizen at your level outside of the formal process, and we are pursuing your concerns.

MS. TRACY: That's very generous of you, Jacque.

MR. DURR: We only have to pursue them to the extent that we feel that the plant is saf

MS. TRACY: I think Mike has something to say.

MR. GREENSTEIN: I would just like t. interject. I think that we're getting off on the wrong track, and we're talking about philosophy, rather than dealing with specifics.

MR. DURR: That's correct.

MR. GREENSTEIN: There are a great many specific allegations that have been raised that the Congressman is aware of and is concerned about.

MR. DURR: Certainly.

MR. GREENSTEIN: That's the reason why I am here today. I would like some of those specific allegations to be addressed.

MR. DURR: They will be, whatever is in this November 12 letter.

MR. GREENSTEIN: The Congressman is on record, along with a number of his colleagues, in asking for an independent investigation.

MR. DURR: I understand that.

MR. GREENSTEIN: The NRC in its wisdom saw fit to reject that request. In that light, the Congressman, who believes that evacuation is impossible, is committed to getting answers to all of the allegations that are raised by the ELP. It's important that those allegations be thoroughly addressed, at least to the Congressman's satisfaction.

So rather than discuss philosophies here, if we could get down to some specifics. It strikes me that this first statement is an umbrella statement under which there are dozens and dozens of specific allegations that can be raised.

What I would ask Sharon and Doug to do is, to start with the first step. Let us identify an allegation. Let's put the allegation on the table, and let the technical expertise of the NRC come into play.

MR. DURR: And that's the direction we are trying to head in. That's the point I was trying to make earlier.

We have looked at these issues that you have sent us. We have read through them and we're prepared to address them. You just have to understand that at some point the NRC has decided that they have done enough under the quality assurance/quality control aspects, and that you have not given us enough specifics that we can go out and find anything the matter with it. We have our own inspection record that essentially tells us that the quality assurance/quality control program was functional and did exist. Were there isolated cases? Certainly. There always will be. That's human error. You can't design out that. But we feel that that particular issue has been adequately addressed.

Now, do you have any specifics in this area that you want to discuss?

MS. TRACY: Yes, I do.

MR. DURR: Please do.

MS. TRACY: All right. Let's start with the issue raised by Scott Kennedy in our April meeting last year -- sorry -- this year. April, 1987

it was. He raised the issue that the legs on the pumps that run from the pump to a pipe into the reactor; that the legs -- one leg on each pump was put in an incorrect position according to the design. In discussing with him his reaction to your report, he mentioned that you said what had happened to 4 of those legs -- there are 12 legs altogether involved in this. He would like to know what happened with the other 8 legs. He would like more specific information on how you reached your conclusions that the change in design allows for the safe operation of the plant. He would like to know if the pumps were moved, and he would also like to know if this change in design will result in premature bearing wear for the pumps.

MR. DURR: What does that have to do with this first issue, 1.3?

MS. TRACY: This is one of the problems with design control.

MR. DURR: Design control?

MS. TRACY: Yes.

MR. DURR: It was a specific allegation concerning the pump, and that really ought to be a separate issue because it's an isolated

case. But I think we are prepared to address it. The fact is, I think that was all fairly much discussed in 87-07. Was it not?

MR. MANOLY: Yes.

MS. TRACY: Jacque, I think we have a problem because 1.3 is very general. As Mike said, it's an umbrella statement. It encompasses many many issues that you have looked at to some extent, and some of which you haven't, and some of it which you have touched on a bit. I think that each issue that I raise which falls in my mind under the broader problems --

MR. DURR: It can, sure.

MS. TRACY: -- and you will find a technical issue that you may or may not have dealt with. This particular issue falls under what I call problems with design control. It was not built according to the design of the plant, and then I am asking specific questions within that concern.

MR. DURR: Sure.

MS. TRACY: We have other concerns. We have them here.

MR. DURR: You need to understand, Sharon, that's one of the reasons why we feel that

there is not any basis for this quality assurance/ design control concern. Because in each instance the specific that you have given us, such as the pump, we looked at that. We looked at it in depth. Kamal Manoly looked at it. He's a qualified structural mechanics engineer. He understands the design. He was a designer for an AE. So he knows that area. He has looked at it, and he has determined that there is not a problem there; that it was appropriately dispositioned. So from the quality assurance/design control perspective we found it was not a problem; that it was adequately controlled; that it was controlled within the confines of the procedures that they had there.

So, therefore, from a quality assurance aspect or design control we have no concern because it was handled the way it was supposed to be. From the technical -- is the pump okay, and are the supports the way they are supposed to be, we also came out of there and we didn't have a problem because we went back all the way back to Westinghouse to get the information concerning -- and that was off-site. That was the constructor of the --

MR. MANOLY: NSSS.

MR. DURR: The NSSS vender that built the thing. They designed it. We went all the way back to them and looked at their calculations, and we came away and we didn't have a problem. So what specifically in that pump concern do you think creates a design control question?

MR. MANOLY: Did you read the response in the reports?

MS. TRACY: Yes.

MR. MANOLY: Did you understand what was in there?

MS. TRACY: I generally understood what was in there.

The person who brought the concern up, do you recall Scott Kennedy?

MR. MANOLY: Yes.

You are repeating the same thing that wsa already answered here.

MR. DURR: If you remember, I asked him point blank in that interview, was this an allegation. He said no. It was just a concern, and he'd really like to know how it turned out. We said, sure, Scott. We'll look into it. We recognize it's not an allegation. Do you remember that? He

specifically said in his transcript that's not an allegation.

MS. TRACY: Jacque, you pulled a fast one on poor Scott. He did not know what you meant. He did not understand. There are semantic differences. But we're getting off the track again. Let's deal with some specific questions.

MR. DURR: All right. Give me the specific questions.

MS. TRACY: I take it you feel, Kamal, that the questions that I just raised have been answered in 87-07?

MR. MANOLY: Yes, on page 52 in the report.

MR. RICHARDSON: I had some questions about your response to this here. Leaving aside whether we have a programmatic issue here or not, dealing strictly with the technical aspects of it, maybe it's out of place right now, but we may as well get it over with.

First off, my understanding of the original question was that one leg on each of the steam generator supports had had to be relocated at its base in order to clear some interfering piping,

and that Mr. Kennedy's concern was that because of the way the relocation was done that that leg would drop as the system was heated up. Whereas the other 2 legs would rise because of the pipe connecting the reactor coolant pump to, I guess it would be the reactor vessel, because of its expansion. And in his preparation for that he did the sketches that we received at the April meeting.

Your answer to the question doesn't make an awful lot of sense in a couple of areas. In your discussion on page 52 of 87-07, just below the center line of the page, you go into some description of the maximum pump flange rise at operating conditions, maximum rise in the columns, and the fact that the pump as installed was level. The pump was installed, we can assume, cold. You described the rise of the pump flange, but you make no reference at all to whether it will remain level when it rises, whether, if it does not remain level, that will or will not put an unacceptable stress on the piping associated with that.

Also, it's my understanding that when you're dealing with a rapidly rotating piece of equipment, ideally you want it to remain level in

order to prevent an uneven load on bearings and subsequent premature bearing wear. So I am concerned myself with whether you have adequately addressed the question of will the pump remain level when the system is heated.

MR. MANOLY: Did you read page 52 of the report?

MR. RICHARDSON: Yes.

MR. MANOLY: Maximum postulated pump flange rise at operating transient condition is 100 mils.

MR. RICHARDSON: Yes, but you haven't addressed the question of, is it level.

MR. MANOLY: The maximum permitted rise of RCP support column during modification was 40 mils.

MR. RICHARDSON: Can you explain how that answers the question?

MR. MANOLY: That means after heating up, after the pump operates it's not going to exceed the 100 mils that the original design intended to have.

MR. RICHARDSON: I'll show you Mr. Kennedy's sketch here. His understanding of the

way the modification was done was that 2 legs had been designed to rise from a slope toward the reactor vessel to a vertical position.

MR. MANOLY: Uh huh.

MR. RICHARDSON: And that because the third leg at its base had been moved toward the reactor that it would then be as installed cold, sloped away from the reactor, and as the piping to the reactor vessel would expand that that slope would increase, and thus the side of the reactor coolant pump which is supported by that leg would drop while the opposite side would rise.

MR. MANOLY: The weld was not performed on the pipe end until after the installation of the modification of the leg.

MR. RICHARDSON: It doesn't matter.

MR. MANOLY: That's what matters to me.

MR. RICHARDSON: No. If the system is cold, you're going to have it in its as-installed position, and up through the final weld it's going to be perfectly fine, but as you heat it up, as this pipe expands, the back 2 legs are going to come to a vertical position and they will rise.

MR. MANOLY: They are allowed 100 mils to rise.

MR. RICHARDSON: Yes. That's not the concern.

MR. MANOLY: It is the concern.

MR. RICHARDSON: No. I'm not saying that that's unacceptable. The concern is that the third leg, which is installed at an angle heading away from the reactor, as that pipe expands, the top of that leg is going to move farther out of plumb, and this is going to result in the inner side of the reactor coolant pump dropping, as opposed to the other side of the reactor coolant pump rising. So that as the system is heated up -- this wouldn't be expected to show in a cold condition. As the system heats up, that pump is going to cock out of level.

MR. MANOLY: When the system heats up, the pipe will take a distorted position or deformed position.

MR. RICHARDSON: Yes. He's calculated in for that. His concern was whether that was acceptable.

MR. MANOLY: The position of the piping at the pump flange allowed, based on code

limits, is 100 mils. Okay. That's what we are saying in the report. When you look at the stress level in the piping in the heated condition, it's not going to be heightened with the allowed code limits of 100 mils.

MR. RICHARDSON: Then the 100-mils limit would be acceptable when it is hot as well?

MR. MANOLY: Yes.

MR. RICHARDSON: Mr. Kennedy calculated that the deflection that would be caused when the pump was heated up is 125 thousandths of an inch, 1/8 of an inch.

MR. MANOLY: The numbers that the pump legs were shifted is listed in the second paragraph of the report on all 4 pumps. If you look at the numbers you see 2 inches --

MR. RICHARDSON: The numbers don't add up either.

MR. MANOLY: These are the true numbers. These are numbers that were changed for the movement of the leg. The highest angle of change was 2.33 degrees.

MR. RICHARDSON: How does that affect your --

MR. MANOLY: I just told you.

MR. RICHARDSON: What you are saying is that his numbers here are not correct. Is that right?

MR. MANOLY: The numbers that you have in the report are the correct numbers.

MR. RICHARDSON: That's a matter of concern to me too. They don't appear to me to work out properly.

MR. DURR: Wait a minute. How did you arrive at that conclusion?

MR. RICHARDSON: Basic trigonometry.

MR. DURR: What are you basing that concern on?

MR. RICHARDSON: I am about to explain it to you.

MR. DURR: All right.

MR. MANOLY: Some of these numbers are pretty close to ours. You have 5 and 1/4 and 5 and 3/8.

MR. RICHARDSON: Yes. That's why I'm concerned. The numbers are close enough to be accurate for purposes of discussion.

His design drawing, how this piece of

equipment was supposed to originally have been installed, shows a position as these legs are installed approximately 2 inches off of plumb leaning toward the reactor vessel in a cold condition. Is that accurate?

MR. MANOLY: That number is irrelevant here.

MR. RICHARDSON: No. It's not irrelevant.

MR. MANOLY: It does not pertain to what we are talking about.

MR. RICHARDSON: It does indeed.

MR. MANOLY: The concern we have is the movement of the legs.

MR. RICHARDSON: Yes. That's why the number is relevant.

MR. MANOLY: The movement of the base, that's what is important to the issue, because what you do, you change the angle of the face of the pump.

MR. RICHARDSON: That's precisely what I'm concerned about.

MR. MANOLY: That's the only thing that's changed in here, the leg movement.

MR. RICHARDSON: But the question is

that the numbers you are using don't appear to me to work out right. Let me explain. For a design figure you've got 2 inches offset at the top of the leg from the bottom.

MR. MANOLY: I didn't say that.

MR. RICHARDSON: The first question I'm asking is, is this accurate.

MR. MANOLY: No, it's not.

MR. RICHARDSON: What is the correct figure?

MR. MANOLY: That number, he has no way of knowing how much that point moves relative to the vessel.

MR. RICHARDSON: I would assume --

MR. GRAY: Can we take a break on this question for a second? I'd like to back up to the original question. The original question from Kennedy was, I have a concern about what happened to the pump after I left. You have a concern as to design control. This is an example of design control.

MR. RICHARDSON: Yes, it is.

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(Mr. Wiggins is not present at this time).

- - -

MR. GRAY: The components could not be constructed in accordance with the original drawing. As a result of that, the modification was made. The information from this modification was worked on by Westinghouse, who reviewed the projected changes, and then reviewed the effects of those changes. This is an example where design control is -- or was done properly.

Exactly the details of these numbers and things is a different issue entirely. The fact is that Westinghouse, the NSSS supplier who has the responsibility for the pump, was involved in the description of the problem, the construction in an attempt to install this, and was involved in the resolution of the problem. This is not an example of a design control problem.

MR. DURR: The fact is, it's an example of design control working the way it's supposed to.

MR. MANOLY: The numbers you see in the report are numbers that were recorded after the change was made. That's what the analysis was based on, the modified location of the piping in the

as-built condition.

MR. RICHARDSON: Aside from the question of whether we have a design control problem here, I'm particularly interested myself in addressing the question I have, which is that I feel that your analysis may have failed to take into account the question that Mr. Kennedy originally raised. What I was trying to do was to discuss it to the point where you can explain to me why your numbers do work because on the surface it doesn't appear that they do. If this is a matter that would best be left to later on in the day, I have no problem with that, but it looks like it's going to take quite awhile to discuss. I do want to go through it completely.

MR. DURR: You're extrapolating, and that's not the way the systems works. Mr. Kennedy had a concern which is very clearly stated on page 50 of the inspection report. We took that concern verbatim, and we addressed that concern. We assumed that to be an allegation, although he clearly stated it wasn't. We addressed it. We addressed the question that he asked. Do you agree that we addressed the question that he asked?

MS. TRACY: He feels --

MR. DURR: That only requires a yes or a no.

MS. TRACY: He feels that there is some --

MR. DURR: Additional question.

MR. RICHARDSON: I feel you did not address this question.

MS. TRACY: Would you like to know exactly what Mr. Kennedy said?

MR. DURR: I know exactly what he said.

MS. TRACY: He said that you have given an answer to the question, but not "the" answer. That was what Scott Kennedy told me the other night on the phone when I asked him how he -- that answers your question.

MR. DURR: We have his question very clearly set forth during the interviews of April the 20th, and a qualified engineer -- are you a qualified engineer, sir?

MR. RICHARDSON: No.

MR. DURR: A qualified engineer, who is experienced in design, stresses, calculations, and

knows how to do these things, looked at this. This man is just short of having a Ph.D. in the area that we're talking about. He has a Master's Degree for sure.

Now, he is thoroughly competent and qualified to look at this technical issue and determine if it's adequate, and he has done that, and in his professional opinion -- he's a Professional Engineer, Registered Professional Engineer. In his opinion, in his technical judgment this is adequately resolved.

Now, once you have an allegation and you address the allegation, we don't want to get into the mode where now you are going to second and third quarter iterate that from that. That's not an allegation. That's your technical concern. If it turns out to be an allegation, we'll try to accommodate that. I want you to understand that you, sitting down with information after the fact and not having any prior knowledge, other than what you have garnered from Mr. Kennedy's discussion and from our inspection reports, really throws into question your ability or your right to make these concerns and these added --

MS. TRACY: Excuse me, Jacque. Does Scott Kennedy have the right to come back and ask you that question?

MR. DURR: Mr. Kennedy has an allegation which we originally addressed here. If he has additional allegations that he wishes to make to the NRC --

MS. TRACY: Regarding this?

MR. DURR: We will be happy to entertain them.

MS. TRACY: If he has additional questions --

MR. DURR: If he has additional questions, we may not answer additional questions because they are just questions. We are not here to educate the public in engineering.

We are here to protect the health and the safety of the public, but we do not have the time or the wherewithal to answer every question that the public has. Because what we'd have to do is send them to college to get them enough background --

MS. TRACY: I think we're getting off the track again.

MR. DURR: Yes.

MS. TRACY: I have a procedural suggestion. You have called in certain of your experts to deal with particular issues that were raised in our response to your report. Some of them are under time constraints and have to leave. Mike has some concerns as well, and he is also under a time constraint. What I would like to suggest is, you have come to this meeting and your people have come prepared to deal with specific issues. I think you probably have some, and so forth and so on.

MR. DURR: Yes.

MS. TRACY: I would suggest that instead of asking me to raise questions which are all listed here in the paper that I passed out, that we deal with the issues that your people came here to address.

MR. DURR: Certainly.

MS. TRACY: And then we go on, just so that people don't have to sit around and listen to discussions that may not concern them.

MR. DURR: That's why I'm trying to get past 1.3.

MS. TRACY: Then we can go on to the issues that I came down here to address.

MR. GREENSTEIN: I sense that there is an adversary atmosphere in this room that isn't necessary.

MR. DURR: That's true. I agree.

MR. GREENSTEIN: It's really being destructive of what this meeting is all about. Obviously there is disagreement. Let's accept the fact that there is a disagreement, and let's try to put the questions on the table and have some answers to the questions without any argument. You are being a tad bit legalistic, Jacque, which is also clouding what we're trying to do here.

MR. DURR: I understand that. But you've only just arrived. We've been dealing with this since 1984, and specifically with ELP since 1986, and we have not had adversarial relationships in the past. But at some point we, the NRC, have to make the point that we cannot go on ad infinitum with this thing, and we will not go on ad infinitum with it.

At some point, if you can establish your credibility - giving us the allegation that says this is wrong, and we can go out and find that that is, in fact, wrong, now we've got something to

deal with. We've spent over 1000 man hours turning over every rock out there, and we cannot find -- we cannot substantiate anything that you say.

MS. TRACY: Can we get down to brass tacks here?

MR. DURR: Let's go beyond 1.3, and we'll come back to that.

MR. RICHARDSON: Let's not just yet.

MR. DURR: Let's get into the technical, and get out of the programmatic stuff.

MS. TRACY: But with the agreement that we will deal with the programmatic issues.

MR. DURR: We will come back to it.

MS. TRACY: All right.

MR. MANOLY: Do you have anymore questions?

MS. TRACY: Are you under a time contraint, Kamal? Are you going to be around?

MR. MANOLY: Yes. I am going back to Washington.

We looked at all 4 pumps. He mentioned only one. I looked at 4. The numbers in here are the offsets that were applied to all 4 legs. Only one leg that's close to the reactor wa

moved. So he mentioned one. I look at all 4 of them, and that's an evaluation for all 4 of them.

MS. TRACY: And you looked at all 12 legs, not just the --

MR. MANOLY: What counts is the one that was moved.

MR. RICHARDSON: What counts is the one that was moved.

MR. MANOLY: Each pump has 4 legs for support. The one that moves, that's the one that counts.

MR. RICHARDSON: 4 or 3?

MR. MANOLY: 3. I'm sorry.

MS. TRACY: So you looked at the leg on each pump that had been moved.

MR. MANOLY: Yes. That's what's important because you don't want to have the pipe installed in a rotation exceeding what is allowed by the manufacturer. When they did the relocation of the leg, they monitored the levelness at that process.

MR. RICHARDSON: During construction?

MR. MANOLY: Yes. They monitored it.

MR. RICHARDSON: That wasn't the

question --

MR. MANOLY: Wait. My concern, I want to see the pipe installed with initial rotation on it exceeding what the NSSS required, and what we found is that the NSSS required a maximum of 40 mils. It did not get there. 100 is the maximum allowed under hot condition. The NSSS said they didn't want it to exceed 40 mils during installation, and to maintain levelness to remain under 40 mils during erection, and they maintained that. That's what's a concern to me.

MR. RICHARDSON: Our problem is, however, that Mr. Kennedy's concern was with the pump remaining level when the system is heated, not the construction.

MR. MANOLY: No. When the pump is heated, it can tolerate up to 100 mils of rise.

MR. RICHARDSON: Okay. Can you translate mils into decimils? We're talking 10 thousandths of an inch?

MR. MANOLY: .1.

MR. DURR: .1 inches.

MS. TRACY: So what you're saying is that according to the NSSS requirements that the pump

will remain adequately level, both when it's cool and when it's hot.

MR. MANOLY: When it's hot, it's supposed to rise, yes.

MR. RICHARDSON: It's supposed to rise, but stay level.

MS. TRACY: But it will stay level when it's heated, as well as when it's cool. There won't be any tipping.

MR. MANOLY: The tipping concern is only important as it induces stress on the piping, and the piping was evaluated in the as-built condition, and the stress limits were within the code limits. That's all we care about. There is no such thing that, well, if it's not level, that's something of concern to whoever. But what you care about is the piping stress.

MS. TRACY: Bearing wear. If the pump isn't level whether the bearings in the pump will be worn unevenly as well. That's also a concern if the pump doesn't remain level.

MR. MANOLY: I understand what he's saying. But the issue that he raised in the last meeting was about the stress of the piping, and I

think we addressed that. We told you what the stress levels were before and after.

MR. RICHARDSON: Mr. Kennedy's figures indicate that he calculates that the pipe going to the reactor vessel will rise approximately 125 thousandths of an inch.

MR. MANOLY: There is no way that he can compute that. You know why? These numbers are arrived to from a computer analysis. The only way he can really know is to look at the model and see what the results are. There is no way, with the geology of the piping and the temperature of the transients it's going to go through that he can estimate how much it's going to rise.

MR. DURR: You have to understand that the pump and the piping is moving, but also the reactor vessel itself is moving. You've got relative motion between all of these things. So when you heat up the reactor pressure vessel, it grows also. So everything is moving.

MR. RICHARDSON: It would be bowed more or less.

The question I had about your figures on the placement of the legs, Mr. Kennedy's sketch

shows the pump as originally installed to have legs set at a slight angle off perpendicular, leaning toward the reactor vessel, so that as the pipe expands, the reactor coolant pump will move outward and the legs will come up to perpendicular. Is that the correct intent of the design?

MR. MANOLY: The pipe will move, yes.

MR. RICHARDSON: His sketch of the as-built condition shows the leg closest to the reactor vessel having been moved in order to clear the --

MR. MANOLY: Interference.

MR. RICHARDSON: -- the piping behind it. That the bottom leg was moved approximately 5 inches toward the reactor vessel.

MR. MANOLY: That's a final adjustment. It already had slope in it.

MR. RICHARDSON: In which direction was its original slope?

MR. MANOLY: You did not really read my report. It moves the amount of 2, 2, 1 1/2, and 1 3/4, not 5. That's the final offset.

MR. RICHARDSON: The problem is it's in the other direction.

MR. MANOLY: What other direction?

MR. RICHARDSON: Your original design, if this is correct, would have called for all 3 legs to be slanted toward the reactor vessel at the top.

Let's take the figure of 2 inches because that's what he had here as the design. Now, if you move this leg to get to a position where you're 5 1/4 inches toward the reactor vessel from the pump, then you can move that leg a total of closer to 7 inches, not 2.

MR. MANOLY: No. That is not correct. The columns are moved by 2, 2, 1 1/2, and 1 3/4.

MR. RICHARDSON: How do you get from 2 inches farther away from the reactor vessel to 5 inches closer to the vessel?

MR. MANOLY: They already had 3 and some numbers. It was 5 and 3/8, 5 3/8, 4 7/8, and 4 15/16. You substract the 2, 2, 1 1/2, and 1 3/4 from the final numbers. That was the original offset.

MR. RICHARDSON: Then your original offset would have to have been with the legs at the bottom, closer to the reactor pressure vessel. That doesn't match his design. That doesn't match the

drawing that Mr. Kennedy put in his question to you, which I have to assume was based on design drawings. He appears to be competent enough, knowledgeable enough to have --

MR. MANOLY: He was a surveyor.

MR. RICHARDSON: Yes. He would have had access to design drawings as necessary.

MR. MANOLY: No. He would not have access. The surveyors, all they use is the surveying drawings that was given to him to work with.

MR. GREENSTEIN: For the record, can we identify who this Mr. Kennedy is?

MR. DURR: Mr. Kennedy was a surveyor. We've got the original transcripts. He was a surveyor working in the reactor building, and he was aware that this occurred. He never saw the end of this evolution. He saw the beginning of it. He knew they had to move the feet, but he did not know what the results were. He moved on to someplace else before they finished it. He was concerned as a concerned citizen. He was interested in finding out what were the final results.

MS. TRACY: He was concerned that the way that the legs had been placed -- it was different

from the original design -- would place undue stress on the pipe.

MR. GREENSTEIN: Is that a fact? Were the legs placed differently than as designed?

MS. TRACY: Yes.

MR. MANOLY: Yes. The legs were moved, the modification on the legs.

MR. DURR: Let's clarify that. There was a design change from the original design. It's not that they were placed differently than they were designed. They were put where they were supposed to be in the final design. It was a design modification or a design change.

MS. TRACY: He had raised the issue, perhaps with you, Tony, I'm not sure, when he was at the plant.

MR. CERNE: Yes.

MS. TRACY: And he had felt that the response didn't really satisfy him. So he went to Representative Hilt, his representative in Massachusetts who raised this issue and brought it to us, and eventually we all got together.

What I would like to do is to convey what you have had to say at this meeting and the

discussion that will turn up in the transcript to Scott Kennedy because he was the one who asked me to raise this issue again, and perhaps he can even give you a call in Washington or wherever you are, if he wants to talk to you about it further. Would that be okay?

MR. MANOLY: Yes.

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(Ms. Gentleman is now present at the meeting).

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MR. DURR: We need to add one more person to the record. For the benefit of everyone here and Mary Beth, this is Mary Beth Gentleman.

You are from the --

MS. GENTLEMAN: Executive Office of Energy Resources, State of Massachusetts.

MR. DURR: So she knows who everyone is, we will identify ourselves. I'm Jacque Durr. I'm Acting Deputy Director of Division of Reactor Safety.

MR. HAVERKAMP: I'm Don Haverkamp, Project Section Chief for Seabrook.

MR. KAUCHER: I'm Jim Kaucher. I'm the Project Engineer in the section of which Seabrook is a part.

MR. GREENSTEIN: Mike Greenstein, District Director. I'm here representing U.S. Representative Nicholas Mavroules.

MR. RICHARDSON: I'm Douglas Richardson, Researcher for Employee's Legal Project.

MS. TRACY: Sharon Tracy, Employee's Legal Project.

MR. GRAY: Harold Gray, Region I.

MR. MANOLY: Kamal Manoly, NRR, Division of Engineering and System Technology.

MR. CERNE: Tony Cerne, Senior Resident Inspector at Seabrook for Region I.

MR. RUSCITTO: Dave Ruscitto, Resident Inspector at Seabrook.

MR. DURR: With that, we'll start again. Are all the questions now -- are we finished with pumps?

MR. CERNE: There is one point that Kamal and I were just discussing. Very simply put, what Scott Kennedy has in the design drawing there is incorrect. Doug's entire problem with this in the way the geometry works out is erroneously based on that incorrect drawing because the offset originally always was --

MR. RICHARDSON: The offset would have been then all the way through; that the top of the support columns in a cold position should have been farther from the reactor.

MR. CERNE: At least on the leg that was moved.

MR. RICHARDSON: Mr. Kennedy's question is not with the leg that was moved per se, but the relation of the leg that was moved to the other 2 legs. Because if the other 2 legs are leaning toward the reactor at the top, and the third leg is leaning away from the reactor at the top, as the system heats up the pump is going to move away from the reactor. We all can agree on that; is that correct? And the 2 legs that are slanted toward the reactor at the top will come up to plumb, and the tops of the legs will rise by a fraction of an inch, and the third leg, which is already slanted away from the reactor to begin with, is going to move to a greater degree of slope, and it's top is going to drop. It was Mr. Kennedy's concern that this would create an out-of-level condition on the pump, rather than having all 3 legs moving parallel which would keep it level. That appears not to have been

addressed, at least from the discussion in the 87-07 report.

MR. DURR: This is a new question.

MR. RICHARDSON: No. This is the original question. That's the problem.

MS. TRACY: This was definitely Scott Kennedy's original concern.

MR. RICHARDSON: I refe you to the second page of the text of the paper that he had put together.

MS. TRACY: Just read it.

MR. RICHARDSON: In the as-built condition, however -- this is using Mr. Kennedy's information -- in the as-built condition, however, the rear legs of the pump cause a rise of about 0.015 inch, while the front leg lowers the pump approximately 0.036 inch, making a total difference of about 0.051 inch.

His estimate is that this would tend to make the pump leading to the reactor -- the pipe leading to the reactor deflect approximately 1/8 of an inch. So this was the original concern.

MR. DURR: No. This is a quote. The quote from the ELP document attachment D says, "Since

this pipe is quite rigid most of the stress would, I believe, fall on the welds of the pump in the reactor. This condition would also cause a slight twist in the cross-over piping".

So he's talking about stresses in the piping.

MR. RICHARDSON: He's talking about a variety of expected results.

MR. DURR: I'm just reading what it says here. It says, "This condition would also cause a slight twist in the cross-over piping".

He is talking about stresses in the welds at the pump in the reactor. I'm just reading a quote.

MS. TRACY: It's a matter of interpretation, what you choose to pick out as being Scott Kennedy's concern. I spoke with him a number of times about this, and he was concerned, yes, about the stress, bearing wear. He was also very concerned about the fact that the pump would not remain level, thus causing these problems.

MR. MANOLY: It says that it can move 100 mils. So obviously he was not aware of that.

MR. RICHARDSON: Is it permitted to

move 100 mils, if it remains in a level position, or is it --

MR. MANOLY: It rises.

MR. RICHARDSON: Is it permitted to tip?

MR. MANOLY: 100 mils. That's a flange. The flange of the pump would rise 100 mils.

MR. RICHARDSON: Which flange?

MR. MANOLY: Where the pipe is welded.

MR. RICHARDSON: Can you show me on this drawing, or do you have another one that would show it?

MR. DURR: What? The pump flange?

MR. RICHARDSON: Yes.

MR. DURR: There is only one flange on that pump that I know of, and that's where the motor mounts to it. It's the top flange.

MR. RICHARDSON: Here?

MR. MANOLY: Yes.

MR. RICHARDSON: The question I'm still trying to get at is, that flange is permitted to rise 100 mils. I have no problem with that. But is it permitted to tip? Is it permitted to go out of level?

MR. DURR: That's a new question.

MR. RICHARDSON: No. That's the original question.

MR. DURR: Based on what we have here that's a new question.

Are we prepared to answer that question?

MS. TRACY: I think there is some disagreement as to whether it's a new question or simply an augmentation --

MR. DURR: To the NRC, that's a new question.

MR. MANOLY: Yes.

MR. DURR: As far as we're concerned, that's a new question. Whether it's a miscommunication or how it arises, to the NRC that's a new question, and we're not prepared to respond to that question. However --

MS. TRACY: In the future perhaps.

MR. RICHARDSON: Would you be willing to discuss it in the future?

MR. DURR: Yes.

MR. CERNE: There is another point to be made here though. I will go back to the record.

Mr. Kennedy's drawing is in error. If that's how he perceived it, and that's how you people arrived at calculations which seem to dispute the NRC's findings, that may be the source of the problem.

MR. RICHARDSON: That was part of what I was trying to discuss, to find out if his information was, in fact, correct. That's why I've been asking about the plan.

MR. MANOLY: Some of the numbers shown in his drawing do not agree with the numbers I got from the documents.

MR. RICHARDSON: Which ones? Can you explain them?

MR. MANOLY: 5 inches, that is not the movement of the leg. This is the final position from -- it was only moved 2 inches.

MR. CERNE: You are assuming that it was 2 inches on the other side, and then it moved 5 inches for a total offset of about 7 inches.

MR. RICHARDSON: That appears to be his understanding.

MR. CERNE: If you take the fact that the pump -- or the leg was already offset 2 inches in the opposite direction, and then it moved to the

final position of 5 inches, the difference is only 3 inches.

MR. RICHARDSON: So the original position then on this leg --

MR. CERNE: Was already in that direction.

MR. RICHARDSON: -- was already sloped from the reactor vessel at the top. The other legs as well, or just that one?

MR. MANOLY: The other legs were not moved. Only the leg that had interference with the piping, that leg was moved.

MR. RICHARDSON: What is the position then of the other 2 legs? Are they parallel to the third leg, or are they at an opposite angle?

MR. MANOLY: I don't know exactly what the angles are of the 3 legs, but I know those have not been moved. They are consistent with the way they are originally designed.

MR. RICHARDSON: Can you tell us --

MR. DURR: Wait. Let's keep the question simple. I think the question is, is the pump acceptably level at heat up.

MR. RICHARDSON: That was the

question.

MR. DURR: What you are interested in, is the pump acceptably level after a heat up. Is that correct?

MR. RICHARDSON: That, as I understood it, was his concern.

MR. DURR: That's the question we'll answer. Is the pump acceptably level after it heats up. And we can answer that question.

MR. GREENSTEIN: And it only took us about an hour to get to the first question of the day.

MS. TRACY: That brings me back to my suggestion before. I know Don had said that several people had to leave around noon or something. Perhaps we should deal with why those people came, so that they can leave on time.

MR. DURR: Let's move on to something a little less knotty than 1.3, and maybe it will move a lot faster.

MS. TRACY: Yes, I agree. We'll come back to 1.3.

MR. DURR: On 2.1, what is your specific question on 2.1?

MR. RICHARDSON: First off, specific case, the case where I believe I saw cold pulling being attempted in condensive piping. The first time I mentioned this it was addressed in the 86-52 report, and your response in that report was -- I'm going to paraphrase -- was that I was talking about the main steam or feedwater cold pulling incident that is documented. That's incorrect, first off.

MR. DURR: What is incorrect?

MR. RICHARDSON: The assertion that that was the instance of cold pulling that I was referring to.

MR. DURR: No. We never said that. We said that that was a documented case of cold pulling. I don't think we attributed that to you.

MR. RICHARDSON: Let me find it, report 86-52. Cold pulling was discussed in a couple of sections in that report. It's discussed on page 91, allegation number 55. The first paragraph cites a list of possible problems, and item F is cold pulling pipe. The third paragraph down, page 91, there is a quote, "On one occasion I saw a crew attempting to force a pipe spool into location by use of a chainfall".

In the context of the affidavit I gave you I was referring to piping within the condenser.

MR. DURR: We understand.

MR. RICHARDSON: Your response on page 92, second paragraph from the bottom, it says that cold pulling of pipe is discussed in allegations number 40 and 46. However, one cold pulling incident did occur.

MR. DURR: Yes. We didn't attribute that to you. We just said that we recognized that there were other allegations.

MR. RICHARDSON: That same quote or another one that I did is cited in one of those which reads --

MR. DURR: You have to understand that there were multiple allegations, others in cold pulling, and we lumped them together because it was a common issue. We looked at those and number 40 and 46, allegation 40 and 46. There was a specific allegation in number 40 that said one of the main pipes from the reactor to the turbine building did not fit, so workers had to use a comealong to make the connection.

MR. RICHARDSON: That was not mine. Cold pulling to align pipes, which is cited as number 46, I believe may have been mine.

MR. DURR: That may be true, but it was so broad and general we lumped it with number 40.

MR. RICHARDSON: I gave you a fairly specific location.

MR. DURR: In number 46?

MR. RICHARDSON: In a discussion in the original affidavit I gave you. I was specifically dealing with piping within the condenser. There were a number of criticisms.

MR. DURR: And we went back and looked at that in 87-07, right?

MR. RICHARDSON: You did to some extent. That was another area I'm concerned about because in 87-07 you say that that particular incident -- I believe it was a transcription error. You quote me as saying that that particular incident occurred in condenser number H, and that there is no condenser number H.

I specifically said condenser number A. If the transcriptionist got that wrong, I'm

sorry. But I think you should have at least given me a phone call to ask why the discrepancy. We were working with the general arrangement drawings right there. I believe I pointed out to you where in the condensers we were talking about. It should have been obvious that there was a communication error there, and that should have been checked out, rather than to simply assume that because the transcriptionist put it as condenser H, that I didn't have a valid concern.

Furthermore, the pipe in question, the 13-stage steam dump, you cite as being attached to the turbine on the upper end and open ended on the lower end, and therefore, because t was open on the lower end there is no closure weld, and a case of cold pulling could not have occurred. That piping is welded to the condenser wall at the far end, and that weld would function as a closure weld.

MR. MANOLY: No, it's not. Closure means closure. It means closed both ends. This --

MR. RICHARDSON: You are forcing a pipe --.

MR. MANOLY: You are using the wrong terminology here.

MR. DURR: Let's slow down. First of all, you are arguing with an expert.

MR. RICHARDSON: I'm sorry if I'm arguing with an expert.

MR. DURR: What's your credentials for arguing with an expert that he doesn't know what closure means. He knows what closure means.

MS. TRACY: It's another semantic difference.

MR. MANOLY: No, it's not.

MR. DURR: Let me finish. We're talking about induced stresses in piping. I want to know where you have your credentials from induced stresses in piping systems. Where do you have your experience from?

MR. RICHARDSON: I saw that pipe being cold pulled in place. It was supposed to be welded to the condenser. What you are doing is fixing the pipe at two locations and --

MR. DURR: I am not disputing what you saw. But when he said it does not have, and you said yes, it does, I want to know what the basis for your argument is.

MR. RICHARDSON: The basis for my

argument is this, apparently the question of cold pulling refers to pipe that is fixed at one end, forced into position at another end, and fixed in place at that end subsequently with the stress still incorporated. Is that correct?

MR. MANOLY: Close.

MR. RICHARDSON: Would you define it more accurately then, please?

MR. MANOLY: Cold pull is when you weld a piping in addition to a pre-prescribed amount that is already accounted for in the design. The design will always allow for a certain amount of closure, offset due to closure of piping. The amount is prescribed depending on the length of the piping from the fixed end, and if you exceed that, that is a cold pull. That only happens during the closure weld, the very final weld on the system. When you are talking about the piping that you are referring to in the condenser, that's a free ended pipe. By definition it has no closure weld.

MR. RICHARDSON: It is welded to the condenser shell. Is that correct?

MR. MANOLY: The other end is free.

MR. CERNE: An inspection was made of

that, and it is free ended on one end.

MR. RICHARDSON: Which end?

MR. CERNE: The down end.

MR. MANOLY: The down end is free.

MR. RICHARDSON: We are accepting the expansion joint which is attached as a fixed point. Is that correct?

MR. MANOLY: It's only welded at one point.

MS. TRACY: Here we have a map.

MR. GRAY: First, is that the piping that you are talking about?

MR. RICHARDSON: Yes, it is.

MR. GRAY: That piping is not welded from the end of the condenser wall.

MR. RICHARDSON: What's the attachment here?

MR. GRAY: That's a pipe support.

MR. RICHARDSON: Let me explain to you the situation I saw. This pipe was installed at the upper end. The people who were getting it into place had a chainfall attached to it --

MR. DURR: Let me ask you a question -- let me make a statement, more appropriately, I

think. You understand that piping is normally put in place using comealongs and chainfalls.

MR. RICHARDSON: Yes.

MR. DURR: So you are aware, just because there's a comealong or a chainfall on a pipe does not constitute cold pull because some of these spools are very very heavy and they have to have some mechanism to move them into place.

MR. RICHARDSON: I wouldn't try to pick up most of them. I agree.

MR. DURR: Just because there's a chainfall on there doesn't necessily constitute cold pulling.

MR. RICHARDSON: Let me continue. What the crew was trying to do, what they were discussing was, they were pulling on the chainfall, and the blocking was somewhere over my head and I could hear it cracking, and they were talking about not being able to bring this end of the pipe into its required location. This end was already attached. They were putting a considerable amount of stress on the pipe to bring it up to the location they wanted to and --

MR. CERNE: That's not cold pulling.

MR. GREENSTEIN: What's the

terminology then?

MR. RUSCITTO: Cold pull is, you take a pipe and you bend it, and then when you weld it, that induces stresses in this weld, not the one at the pivot. There was never a weld at the end. So it couldn't have been a cold pull.

MR. RICHARDSON: I'm not concerned about the pivot.

MR. CERNE: You don't have a weld at both ends.

MR. RICHARDSON: Okay. Not at both ends, but you have a weld toward that end of the pipe.

MR. DURR: The other thing you have to understand is that here again, we went far beyond our normal scope of inspection. The condenser itself is not safety related. The rules and procedures that the NRC imposes on the licensee are not in effect in this particular case because that entire condenser is not safety related, nor is the piping that is attached to it, nor are any of those things that are around it. Even the turbine is not safety related. So you have to understand that, yes, you may have seen cold pull. However, we went out and looked at

it, and we feel very strongly from a professional that cold pull in this particular case probably did not exist. Now, maybe it does. That's a moot point.

The other thing is that it's open on one end. It's not a closure weld. It doesn't fit the definition of cold pulling. It's non-safety related. It's beyond the NRC's purview to even look at that piping. However, we did, just to satisfy ourselves that there wasn't some other underlying issue going on here that we needed to be aware of. From the NRC's point of view, yes, we are interested in did the licensee control cold pulling, and we looked at that issue. We, the NRC, looked at that issue a long time ago, independent of the allegation. In this particular instance we went back one more time in a non-safety related area beycnd the NRC's purview, and we looked at that specific one trying to be responsive to the public's concerns.

MS. TRACY: That was very good of you.

MR. DURR: We have found that there is no problem there. So I don't know where we are going to go with this discussion. As far as the NRC is

concerned it's over with. There's nothing there.

MR. RICHARDSON: Can I get one more clarification from you?

MR. DURR: Certainly.

MR. RICHARDSON: As far as cold pull then, your specific concern is with the integrity of the closure weld, in that if the weld deteriorates, you're going to be opening the pipe?

MR. RUSCITTO: No. You're welding the pipe that's under stress, so that stresses induced in that weld exceed the stresses that are allowed for in the design of the weld.

MR. RICHARDSON: You're not concerned specifically with the stresses in that weld because it's --

MR. MANOLY: Once you have a weld it becomes like the pipe. It's really part of the pipe. Once the weld is finished, it's like part of the pipe.

MR. RICHARDSON: Your concern is for the integrity of the pipe itself, rather than the integrity, say, of any attaching welds.

MR. MANOLY: Yes. When the 2 ends of the pipe are welded together, it becomes one part.

MR. RICHARDSON: A closure weld, and in this case a weld fixing one end of the pipe to a support.

MR. MANOLY: No. Supports are different. Don't mix up supports with piping.

MR. RICHARDSON: It's a support regardless.

MR. MANOLY: No, it's not. When a pipe is welded at a support, that's an anchor. That's a different story. We're talking about closure welds which is 2 ends of a pipe welded together to make a continuous system. The concern would be if I moved the 2 ends. They are like this, and I push them towards each other. I will overstress the piping. If the other end of that piping is closed at anchor point, which is a support, then I'll be going beyond the code limit for the design.

MR. RICHARDSON: So your concern for the stress then, are you specifically concerned with stress at that weld, or the stress induced by moving that pipe in any other place?

MR. RUSCITTO: That is part of the as-built.

MR. RICHARDSON: Are you concerned

specifically with the weld, or with stresses induced in the length of the pipe?

MR. MANOLY: The weld becomes part of the pipe. It's a continuous system. Then you would want to see the other points on the line where the stress rise would be, as pushing the 2 ends of the pipe to each other.

MR. RICHARDSON: So your concern then is primarily with the pipe having wound up in a location it's not supposed to be.

MR. DURR: We are concerned about the stresses in the piping system.

MR. MANOLY: It will change at every point in the pipe. The highest change would be at the anchor end.

MR. DURR: Those are limited by the ASME Piping Code that limits the amount of stress that you can have in that piping, and this contributes to it.

MR. RICHARDSON: So if the piping is forced into a position and held in that position by other than a closure weld, say, for example, by a support, is that still considered a case of cold pull?

MR. MANOLY: No. That is a different situation.

MR. RICHARDSON: Is that a matter for concern?

MR. MANOLY: If the support is installed in a location other than its design location, that's part of the as-built program. That's a different program.

MR. RICHARDSON: If the pipe is forced into a position other than what it would naturally lie if one end is fixed, is the fact that that pipe has been forced into a different position, and if it is fixed in that position, is that a matter for concern in and of itself? Or is it only a matter for concern if there is a closure weld connecting it at both ends through further piping? Are we concerned with the fact that the pipe is closure welded, or are we concerned with the fact that the pipe may or may not be stressed by nature of its position?

MR. MANOLY: You can only induce a stress in a pipe if one of the ends is restrained. If the pipe is free, then you are not inducing stress in it.

MR. RICHARDSON: That's the point I'm

trying to get to with the condenser piping. It's not a closure weld at the open end of it. We agree that it dumps into the condenser, but it is fixed in location at that end by whatever the item is that's shown on that drawing tying into it. Is that correct?

MR. GRAY: Pipe support, yes.

MR. RICHARDSON: It is fixed in that location?

MR. GRAY: No, it is not fixed. It is supported at that location.

MS. TRACY: So it can move.

MR. MANOLY: Stress can only be -- the kind you are talking about here would be caused by a seismic restraint or an anchor. A dead-weight support is not going to stress a piping, if you move a dead-weight support.

MR. RICHARDSON: And that's a dead-weight support?

MR. DURR: I suspect very strongly that's not seismically qualified pipe.

MR. GRAY: Could I summarize where we are on this one from my point of view?

MS. TRACY: Yes.

MR. GRAY: Doug had a concern with potential cold pulling on the stage 13 piping. We went to the field. We reviewed the drawings applicable to that. We went into the condenser. We looked at the piping. We saw how it was in place at this point in time, and we asked ourselves whether or not that it's possible that there could be significant cold pulling of this piping.

Our conclusion was that there is not a significant cold pulling on this pipe. Therefore, your allegation is not substantiated. You may have seen them pulling the pipe, forcing the pipe, but at this point it really has no bearing on the as-constructed condition.

MR. RICHARDSON: Why is that?

MR. RUSCITTO: Even if it was safety related, it would not have an impact on the design. By virtue of its physical design, what you saw could not have induced abnormal stresses on it because of the method that it's fixed.

MR. KAUCHER: Abnormal residual stresses.

MR. RICHARDSON: Why could it not have, if you've got it fixed at the turbine exhaust

and you've got it fixed at the dead-weight support?

MR. MANOLY: Because dead-weight supports do not restrain the rotation of piping.

MR. CERNE: You don't know what a support does. There are different types of supports. Some do not totally restrain the pipe from moving. There are different types of supports.

MR. DURR: They are flexible.

MR. RICHARDSON: If this is the case, then the cold pulling question is moot because the pipe support will permit movement in the pipe?

MR. CERNE: Exactly.

MR. RICHARDSON: Okay. I wish it had been better explained.

MR. CERNE: I think that's the point Jacque made to begin with. The point of looking at an allegation is to satisfy the experts, the NRC, and the public that there is no concern. Harold did that when he wrote the report. What we just spent a half hour doing is trying to re-educate you as to how this system is designed and is supposed to work.

MR. RICHARDSON: To me, that's a very desirable thing, and I appreciate it when you would take the time to do that.

MR. CERNE: I don't think we have the luxury of time to do that, particularly with this amount of effort.

MR. DURR: We obviously want to do this. We want to make everybody comfortable. We can't do it with everybody. It's physically impossible to take everybody in the New England area and re-educate them, so to speak.

What you have to believe is that there are experts who are highly qualified going out and looking at these things, taking what you are saying seriously. When it comes to allegations, we take them very seriously. We process them through a panel. They are looked at. We select experts in the area to go out and resolve them, and then the panel of upper management looks at what the resolution was, and agrees that's acceptable or unacceptable, whether we need more or less. So it's not just any one individual taking what you've said and going out and sweeping it under the rug, so to speak, but it's a body of people looking at these things and taking each one seriously because we don't know where the big one really is.

MS. TRACY: And neither do we, Jacque.

MR. DURR: Some of them are innocuous. I understand that.

MS. TRACY: Yes. That's why if perhaps your explanations to some of the allegations that have been raised don't entirely satisfy the people who raised the allegations, that's why we come back and talk to you some more about it. I do appreciate the fact that, as Tony said, you're taking time out to explain it in some detail.

MR. DURR: Some of these are very very knotty technical problems.

MS. TRACY: I know they are.

MR. DURR: The fact is, in one or two cases we've gone out and gotten consultants to come in and look at these issues because we felt that we needed just a little bit more depth than what we had available on our staff. So you have to understand that we're taking these very seriously, spending a tremendous amount of time trying to resolve them.

MS. TRACY: Definitely I understand that. I think we all do.

MR. DURR: Good.

Moving right along to 2.2.

MS. TRACY: I would say that this

issue having to do with the CBA drawings also falls under some of the programmatic concerns that I raised. However, there is some specifics here that I think Doug can probably speak to, having to do with the fact that there were no construction drawings for specific pipes in the CBA system.

MR. DURR: Suresh Chaudhary, who followed this one, he's out. He's not well.

What's your specific concern here?

MR. RICHARDSON: First off, you've got a fair amount of electrical equipment, the operating equipment in the area in the diesel generator building where the air conditioning for the control room is. There is no isolation between the trains for that system as far as physical barrier for fire protection.

MR. DURR: I think we've got 2 different issues going.

MS. TRACY: Let's stick to this one right now; that there were no design drawings.

MR. RICHARDSON: You mentioned in one of your reports that construction drawings were issued.

MR. DURR: Yes.

MR. RICHARDSON: I did the as-builts for the smaller refrigerant lines on the CBA system. I don't recall the unit numbers, but the lines were 1/2 and 3/4 diameter, I believe. There were no installation drawings that were done before those. The ones I did were it.

MR. DURR: I'm going to operate from my memory, but when we originally looked at that issue, I thought we found that there were drawings issued in 1978 --

MR. MANOLY: Yes.

MR. DURR: -- on that system that showed that there was an original set of design drawings. We found drawings dated 1978, I think was the date -- we are going from my memory now -- that were issued back then. You did the as-builts, we understand.

MR. RICHARDSON: I did the as-builts on a supplemental train. There might be a difference.

MR. DURR: I'm not clear on this. I think this was field run piping; was it not?

MR. RICHARDSON: Yes.

MR. DURR: There is nothing wrong with

field run piping. We do that all the time, especially in small bore piping.

You have to understand that when you build a nuclear power plant, they generally very specifically locate the big stuff. The 30-inch piping is planned very specifically where it goes through the building, but where you start getting down into smaller diameter piping, that goes in last. It goes wherever there is space available that's leftover, if you will, after you put the highly critical, large, heavy equipment in. So field run piping, field run cable, there is all kinds of what they call field run. An engineer goes out and says we'll go from A to B because there's no interference there, or we may have to go A, B, C because there is interference and we'll go around it. So they field run it, or it's not "designed" back in the AE's office specific location because you have all of these interferences that you can't account for. So field run piping is common, and there's nothing wrong with it. That's a controlled process.

MR. RICHARDSON: That concept, I have no problem with.

Specifically with this system, the problem I've got with it is that at the areas where this tubing was run into the air conditioning equipment, at one point they underwent a series of revisions and reinstallations. There were things, like expansion joints were installed incorrectly to vender's specifications. There were supports that didn't adequately keep the pipe in place. In some of these areas it went back and forth over several design revisions.

I am concerned that there may not have been adequate control in design process to make sure that it was done right. At one point on one of the units I was told by a fitter who was working on it that the system would not operate as it was designed as he was installing it. I have to assume he knew what he was talking about. He was, I believe, a refrigeration mechanic. He did seem to have a pretty good knowledge of what he should and shouldn't be doing.

This year you have lost one unit of one of the supplemental trains. I don't know if it's specifically one of the ones I was working on, or the other one. I was working on one of these supplemental

trains. Is there any connection between the loss of that unit and any deficiencies to the design of the refrigerant piping?

MR. DURR: Are you familiar with the loss of one of these units?

MR. RUSCITTO: Yes. I don't see any connection.

MR. DURR: As I say, with field run things you are going to end up with changes and alterations because they may have had to move it, and we don't know for what reasons they moved these things. If something else comes along that is more important than that, they're apt to move that -- they're subject to move that piece of equipment several times because something preempts it, something more important preempts it. It's easier to move a small diameter piping than it is to re-route another larger, more critical piece of equipment.

MR. RUSCITTO: I don't see the tie that you are making though. Could you be more specific? If you could be more specific, maybe I could address the issue. I assume you're referring to the CBA air conditioning units that sit on either side of the diesel generator building and horizontal

fan cooling coils, and the refrigerant lines run down to the cooling coils in the control building to the fan cooling units that cool the control room. That's the safety related system we are talking about.

MR. RICHARDSON: Yes. That's generally where I'm talking about. Specifically what I'm concerned with is the smaller supplemental unit.

MR. RUSCITTO: The AC5 A and B.

MR. RICHARDSON: Yes, I believe so. Specifically with regard to the set that's on the right-hand side as you're facing the diesel generator control building wall, the unit that's on the control building side of that wall, I don't recall the equipment designation, but that particular train, the piping within the last couple of feet going into that unit was revised repeatedly. At one point they did have an expansion joint -- flexible coupling, rather in a vertical position. Whereas the manufacturer's specs called for it to be horizontal. That configuration was changed repeatedly. I lost track how many times. I believe it was least 3. That was the area in which the person I was talking to said at one point that it would not function; that it had been designed incorrectly.

Also down at the unit associated with that train on the diesel generator side of the wall I found a support when I was doing as-builts that -- I'm using the term support in a generic sense -- but there is a supporting structure that was supposed to hold that tubing in place that had no provision for any horizontal restraint, where you could take the pipe and flick it, and it would move several inches back and forth like this (indicating).

MR. RUSCITTO: It's not an uncommon design.

MR. RICHARDSON: No, but I called it to the attention of, I believe, a field engineer, and it was later modified. It was my understanding that these things are supposed to be QC accepted before they go to as-built; is that correct?

MR. DURR: No. QC takes the as-built drawings usually and walks them down. That's the last thing that happens. What usually QC uses for their final acceptance is the as-builts.

MR. RICHARDSON: It is certified complete and turned over to as-builders then.

MR. CERNE: The Pullman process for piping was a 2-part process. They had a form 10 A or

B.

MR. RICHARDSON: This is at the time I was working for Pullman, if that helps clarify your question.

MR. CERNE: What you did was, you had a QC process which was going on, and also an as-building process that was going on. Normally the QC process would be completed before the as-building process, to answer your question.

MR. RICHARDSON: So how did that support get by? How come nobody else flicked it to see if it moved?

MR. RUSCITTO: The support design has several facets. One of them includes seismic design.

MR. RICHARDSON: Is that system seismically supported?

MR. RUSCITTO: Yes. One is seismic. Then there are other supports that may be added once the system is placed in operation due to vibration. These are supports that are not accounted for in the seismic design because you can only find out where the piping vibrates once it's in operation.

As a matter of fact, we've had concerns that you may have read in our reports about

other areas where we went out and saw equipment vibrating and talked to the licensee, and they said yes, by seismic design it's not required, but it appears to be a good idea to put these additional supports in, and they do that over the life of the plant.

Not knowing the specific support, I can't address the specific support, but that could very well be a normal process of someone going out and saying hey, it looks like maybe we could put this in now. They want to be conservative. Throw in another support here. In the final design the as-built reconciliation and the stress reconciliation will make sure that there's no undue stresses applied.

MR. CERNE: So what you're implying is that you're talking to the engineer or somebody about this. It was contrary to design. The QC inspector checks if it's in accordance with design. If you asked the question that caused the individual to look at it and change it, we don't know the rationale behind that.

MR. RICHARDSON: That basically was what happened. I pointed out that that tubing could

be moved easily, and the support was modified to hold it in place horizontally. My original question was, how come that had been allowed to happen in the first place.

Concerning the seismic qualification of the supports, at the time we were doing as-builts on that system we had no information that indicated they were supposed to be seismically designed.

MR. RUSCITTO: When was that?

MR. MANOLY: What year?

MR. RICHARDSON: Summer of '82.

MR. DURR: I don't understand. You were doing as-built drawings?

MR. RICHARDSON: That's correct.

MR. RUSCITTO: Supports or piping?

MR. RICHARDSON: Piping. We had to indicate locations of supports, of course.

MR. RUSCITTO: Why --

MR. RICHARDSON: When I was doing the as-building, I was also generating construction isometrics to support that line.

MR. DURR: I understand.

MR. RICHARDSON: As part of that process we had to enter building materials, some

other items, and also support classification. I gave you a copy of a couple of the as-built drawings I did from that.

MR. DURR: Yes. I understand.

MR. RICHARDSON: If you recall --

MR. DURR: But you were working for engineering then, and you were generating drawings that would later go to engineering and be further processed; is that correct?

MR. RICHARDSON: I was generating the drawings, as I did the as-builts. I was doing both.

MR. DURR: I understand that, but those drawings were further processed by engineering.

MR. RICHARDSON: During the course of putting those drawings together we were required to indicate the -- I guess you would call it the class requirements and the supports.

MR. RUSCITTO: How would you know that?

MR. RICHARDSON: I was told to.

MR. RUSCITTO: How would know what the class of support was?

MR. RICHARDSON: I asked my supervisor, and he looked it up, and --

MR. DURR: He had the information.

MR. RICHARDSON: He gave it to me as non-nuclear, non-seismic, non-safety related.

MR. DURR: So he made a mistake. Is that what you're saying?

MR. RICHARDSON: I am saying his information was bad. He probably got it right according to the book.

MR. DURR: This sounds like a new allegation to me.

MR. RICHARDSON: I discussed it with you in April. That's why I gave you the copy of that drawing.

MR. DURR: But you never said anything about not knowing the seismic qualification of the piping system, and having it denoted, and that your supervisor had bad information. I will go back to the transcripts, but I'm almost sure that's not in there. I don't remember any of that.

MS. TRACY: Perhaps it didn't get stated exactly that way.

MR. CERNE: Let's clarify where we're at now. Are you saying that those things are non-nuclear-safety, non-seismic right now, or just

that in the process of information between you and your supervisor at one point you thought they were non-seismic, but they really were seismic?

MR. RICHARDSON: I don't know whether they are right now or not. One of the reports that you people did says that they are. I believe it was the first one. I was surprised by that because the drawings I had from that period indicated that they were not. That's why I brought the drawings down to the meeting in April, and that's why I called it to your attention.

MR. CERNE: So what's the current problem?

MR. RICHARDSON: It comes under the heading of design control. We had apparently a number of --

MR. CERNE: Are you a designer?

MR. RICHARDSON: No.

MR. CERNE: Was your supervisor a designer?

MR. RICHARDSON: No. But why did we have bad information?

MR. DURR: I'm not sure we've established yet that you had bad information. You

suspect that your superviser had bad information.

MR. CERNE: It's quite possible that at one point they were non-seismic, and they got changed to seismic.

MR. RICHARDSON: I've considered that possibility.

MR. CERNE: What are we chasing at here that's wrong with the plant as-built?

MR. DURR: Today. What's our problem?

MR. CERNE: That's what we're after, is the plant going to operate as designed.

MR. RICHARDSON: My question would be, if these supports were originally designed to non-seismic quality specifications, if they were, has the situation been corrected.

MR. CERNE: Our documents say it is seismic.

MR. RICHARDSON: Your report says it is.

MR. CERNE: And you have information that is different?

MR. RICHARDSON: At the time we were as-building them, the information we had said that

they weren't. If that information was also what the construction people had, then how can we be sure that they were, in fact, seismically qualified designed and built?

MR. RUSCITTO: So really your question is that the CBA system as presently designed should be seismic, but may not be constructed that way. Am I paraphrasing you correctly?

MR. RICHARDSON: I believe that would be a close approximation.

MR. RUSCITTO: So then we can answer the question that we've either looked at that, or we haven't. We may not have looked at it, if you've never raised that as an issue.

MR. RICHARDSON: I thought I had raised that in April. That's why I brought in copies of those drawings.

MS. TRACY: Could I ask a question?

MR. RICHARDSON: I assume it was supposed to be seismic, and the information we had indicated that it wasn't. And if that information had also gone to the construction people, then is there assurance that it was, in fact, constructed to seismic standards.

MS. TRACY: When you check a system, when you say you can check whether or not this is seismically built, do you go and look at the documents, or do you go and look at the actual system itself?

MR. RUSCITTO: It depends on what you want to find out.

MR. CERNE: What often happens, and we found this in our own inspections, that you can't always tell from the isometric drawings how the supports are designed. You have to go to the specific support drawings because sometimes there are detailing errors in the isometrics which might draw the class break of a non-nuclear safety versus an ASME line in the wrong place, and yet when you say there's an error here and you go into the non-nuclear safety and go to the specific support drawing, you find it's an ASME support designed and built support.

MS. TRACY: So after you go to that support drawing and it says it's ASME and seismically proper and so forth, do you ever go and look at the actual thing?

MR. RUSCITTO: Oh, yes.

MS. TRACY: To make sure that it

matches up with the drawings that you're looking at?

MR. RUSCITTO: Yes. As a matter of fact, that's part of one of the things our NDE van examination does, which came out to the cite on several occasions, and I've accompanied them. They go around with specific pipe support drawings and evaluate the quality of the welds, the thickness of the welds.

MR. RICHARDSON: Where did we say that it was seismically qualified?

MR. RICHARDSON: I believe it was in 86-52.

MR. DURR: Number 54.

MR. CERNE: There is another gate there that you meet. If you're non-nuclear safety, non-seismic, it doesn't require QC/QA. If it's either ASME, which is your safety grade of piping, or non-nuclear safety, but it has seismic design because it possibly could affect something safety related, QC is applied to that.

So not only are we looking over the shoulder of how it's built, we're also looking over whether the QC process worked, in looking over the shoulder of the people who decide that.

MS. TRACY: Do you look to make sure that the QC is used appropriately as well?

MR. CERNE: It would only evidence itself if there was something wrong. If you don't find anything wrong with the way it's built, then the QC process worked because that's the intent of the QC process. The QC is not an entity in itself. QC is a means of assuring that the plant is built correctly. If the plant is built correctly, then QC worked.

MS. TRACY: However, if QC did not work, you won't be able to know either that, or whether the plant was built properly. If there is a failure of QC, you won't know that there was a failure of QC because there is nothing to "QC" QC, except you guys.

MR. CERNE: That's not correct. There's levels of QC. There's QC inspection, QC surveillance, QA, audit. That's all part of the defense in depth of the QC process. They call us the fourth level of inspection, looking over the shoulder. We do a sampling process, but when we do a sample of different areas and can't find anything wrong in the final construction, that gives us our assurance that their QC process is working. That's

the way the system works.

MR. RUSCITTO: If you have a question now that the CBA system may or may not be installed properly, if it hasn't been addressed before, you can either raise it as a new allegation, or a concern which is not an allegation.

MR. RICHARDSON: What exactly is the difference between the two?

MR. RUSCITTO: Because an allegation says that you believe that there is something wrong.

MR. DURR: The process.

MR. RUSCITTO: A concern or question says, hey, I'm a concerned citizen. I don't know if there's anything wrong, but I don't understand. Would you mind explaining it to me? If you have a concern, we can say that we'll do our best to explain it to you. We don't have any obligation to do it, if we have other constraints.

MR. CERNE: It may sound like semantics to you, but an allegation is a statement of wrongdoing. I know that is wrong; not I suspect something is wrong, and would you please, the NRC, go look at it for me.

MR. MANOLY: The pump support, that

was a concern, and we looked at it because we were interested in it.

MS. TRACY: You treated it as an allegation.

MR. MANOLY: I did whatever I thought I needed to do to assure myself that it was not a concern.

MR. RUSCITTO: A concern is a basis for inspection. Concerns by everyday people in the plant, concerns by citizens can often lead us in an area where inspection can give us valuable insights into the quality. In some cases the concerns that you guys generated caused us to do inspection over and above what would be required because of an allegation because we wanted to insure ourselves that there was no problem. Regardless of whether the allegation was justified, we go off on tangents.

MR. DURR: I think there was a point made that needs to be emphasized, and that is that an allegation is an individual who has first-hand knowledge that something is wrong, and presents that to us in that form. I know something is wrong, and therefore, you need to look at point B. That's an allegation.

The things that you're talking about here today are really concerns. You're saying I think this, or I suspect that, or I'm not sure about this. That's not an allegation. That's just a question on your part because you don't understand the process; that you haven't been privy to the whole picture. We're trying to respond to some of those things, but those are not "allegations".

But if you look me in the eye and said, my supervisor had bad information, and he got it out of this book, that's an allegation, and I can do something with that.

MS. TRACY: Do you want to on this particular thing?

MR. DURR: Is he making an allegation? Because if he is, we will treat that accordingly.

MS. TRACY: Do you want to make that an allegation?

MR. DURR: Do you have first-hand knowledge that there is wrongdoing there?

MR. RICHARDSON: No. What I do have is first-hand knowledge that I was told that the system --

MR. DURR: You have a question.

MR. RUSCITTO: You being told the incorrect information may not have any effect on the safety of the nuclear power plant.

MR. CERNE: If there was incorrect information and if it wasn't changed subsequent to that.

MR. RICHARDSON: Stated as a concern, I would say that I am concerned that the correct information may not have been applied when the plant was built.

As an allegation, what I would say is that I was given information concerning the seismic requirements for that system that does not match your statement that it is seismic as reported. I gave you copies of drawings at the April meeting. I don't have them with me now.

MR. TRACY: Do you still have those?

MR. DURR: I don't know. I've got 2 boxes full of things. But once we write an inspection report we throw all that stuff away.

MR. RICHARDSON: Okay. I can send you new copies.

MR. DURR: Send us new copies, and

we'll do something with it. Once we get those copies and it's clear to us that there's a discrepancy, we'll take some kind of further action with it. If those drawings support your statement -- if they say -- what you're essentially is, your drawings essentially say non-seismic?

MR. RICHARDSON: Non-seismic, non-nuclear, non-safety. Those are the drawings I gave you in April. The reason I gave you them --

MR. DURR: And you're sure that they were part of the air handling system that is supposed to be safety related.

MR. RICHARDSON: That, I don't know. You have to tell me what part of it is supposed to be safety related. I can tell you what part they are.

MR. DURR: We'll take your drawings and we'll decide if we have an allegation. We may not have an allegation.

MR. RICHARDSON: That was the small bore, 1/2 and 3/4 inch refrigerant lines in the supplemental --

MR. DURR: When are you going to send those to us, Doug?

MR. RICHARDSON: I'll be able to send

them to you sometime this week.

MR. DURR: All right.

MR. RICHARDSON: Can you give me a mailing address?

MS. TRACY: I've got it.

MR. CERNE: They list the supports as NNS.

MR. RICHARDSON: I don't recall exactly what they're listed as. They were a very unspecified thing at the time.

MR. CERNE: I am unclear then what makes it non-seismic, non-safety, if it's not in writing.

MR. RICHARDSON: I wish I had a copy of them with me. There was space on the drawing title blocks that was used to designate the type of support requirement that the system was built to use. There were 3 or 4 categories that would be applied as appropriate, and this one, I was told, was to be designated as non-nuclear, non-seismic, non-safety.

MR. DURR: But that's written right on the drawing?

MR. RICHARDSON: Yes, it is. The majority of those drawings I have are designated as

partial as-builts. I believe a few are 100 percent as-builts. Even the partial ones did reflect the information that they had available at the time. The reason I'm concerned is that that information apparently is in conflict with what you say in 86-52.

MR. DURR: We will take this under advisement as a concern now. Once we receive the drawings and we determine that there is a discrepancy, we may change this thing to an allegation.

MS. TRACY: He doesn't have the drawings with him.

MS. DURR: He doesn't sound too positive at this moment that there is a problem.

MR. TRACY: It's too bad you tossed the other ones he gave you or we would have them right here.

MR. DURR: I didn't say I tossed them. I said that I usually throw all those things away. I don't know whether I still have them or not.

MR. RICHARDSON: I can tell you as an absolute that I was told to --

MR. TRACY: Let's move on.

MR. DURR: On 2.3, what's your

concern?

MS. TRACY: My feeling is that we can entirely skip 2.3 since it's simply a refutation of what you all said, and it has nothing to do with the safety of the plant. It has to do with Doug Richardson's qualifications to talk about what he's been talking about.

So let's go on to 2.4.

MR. RICHARDSON: I would like to discuss a couple of things.

MS. TRACY: How about if we skip it for now because our time -- Mike has to leave soon, and I'd rather deal with some of the more meaty issues.

MR. RICHARDSON: Your evaluation in 2.3 here does not match --

MR. DURR: 2.3? I thought we skipped that.

MR. RICHARDSON: I would just like to note that it does not match the discussion of the UE&C as-built program in the 8407 report.

MS. TRACY: Which we mentioned in here.

MR. CERNE: In terms of --

MR. RICHARDSON: As-builders having responsibility as to qualifications.

MR. CERNE: They have to be qualified, but not as inspectors.

MR. RICHARDSON: I was qualified level 2R.

MR. DURR: That doesn't mean you had to be. That just means you were.

MR. RICHARDSON: I was required --

MR. CERNE: But that doesn't mean you were an inspector. All QC inspectors were qualified ANSI N45.2.6. As-builders were qualified to other criteria which may have included some of the criteria used to qualify QC people, but that doesn't mean that you were an inspector because an inspector is making judgments based on the criteria and training. You were documenting things and not making those judgments.

MR. RICHARDSON: We were responsible for identifying non-conformance as well.

MR. CERNE: Everybody in the plant was.

MS. TRACY: Excuse me. I would really rather not deal with this particular issue.

MR. DURR: Fine. 2.4, here we go.

MS. TRACY: -- as to who was or was not qualified to do what or what not.

MR. CERNE: What is the status of that though?

MR. RICHARDSON: We would like to discuss it later, if there is time.

MS. TRACY: Why don't we leave those for discussion later, if there is time.

MS. GENTLEMAN: May I ask one question on our prior discussion?

MR. DURR: Certainly.

MS. GENTLEMAN: Regarding the comment that where a plant meets seismic qualifications for the piping system and satisfies seismic criteria as-built, but later on when it operates as you mentioned vibrations appear, you indicated that you could ask the licensee to add a support to deal with the vibration that shows up during operation. Is that correct?

MR. RUSCITTO: I would say we would ask the licensee to do an evaluation whether a support was required based on a visual observation vibration. You can't really stand there and watch a

pipe vibrate and determine whether it's an adequate vibration or not because different piping systems have vibration specs. From a professional point of view, you can have a good feel for whether a vibration is excessive. They may go down there and measure it, and even though it looks excessive, if it's within the scope of the code that's applicable, it may not be required. But in some cases, yes, it may be.

MS. GENTLEMAN: If their report or study indicates that a support is needed, does the NRC have the authority to order a support added?

MR. CERNE: The determination of whether it's needed is based on engineering analysis which we may spot-check. We're not making them put in the support. Part of the testing program, they instrument all the piping and take vibration measurements. If they design something and they say this is an anomoly, it's not acting exactly, if something is not acting exactly the way it was designed for whatever reason, their testing and the instrumentation tells them that it's beyond spec in vibration, they would then analyze that and determine whether, even though it's beyond criteria, it's still

acceptable for some other reason, or no, we're going to address it by putting something into it to fix it.

MS. GENTLEMAN: Let's suppose the answer is the second; that it needs to be addressed.

MR. CERNE: They determine that.

MS. GENTLEMAN: The licensee determines that it needs to be addressed. What if the licensee determines that it needs to be addressed, but it cannot address it?

MR. DURR: Cannot, or will not?

MS. GENTLEMAN: Let's say cannot for financial reasons.

MR. DURR: We've never run into that case. That's a case that I am afraid we have never had to deal with, where a licensee was financially incapable of dealing with a need. We have never run across that, not in my experience. I don't know if anybody else on staff has.

MR. CERNE: Once they generate a piece of paper to identify the problem for resolution, it has to get resolved. There is no way of saying well, we'll just leave this thing hanging out there. It has to be resolved. If we disagree, if we in our

review disagree with their resolution, there's mechanisms for the NRC to take action, including orders to make them do things. But like Jacque said, we've never reached that point.

MS. GENTLEMAN: Okay.

MR. DURR: 2.4?

MS. TRACY: I think 2.4 raises a number of questions. This deals with the apparently irreparable cracks leaking groundwater in a variety of buildings. 2.4.3.1 talks about the containment itself where there was no water seepage seen, although there are cracks in the containment concrete which you have said are to be expected, and I believe in the past you have told me that you go out and map them and so forth.

I guess the question we raised in this particular part was, if there's a steel liner inside the containment wall, how would you be able to see if there was seepage within the containment wall because it wouldn't seep through the steel liner.

MR. DURR: What you have to understand is, there are multiple structures throughout the United States and the world in water. They are built in water. A good example is a dam. It's built in

water. All concrete is porous and water permeates through. So concrete and water is not bad. We recognize that. The world knows that.

If I have a concrete structure and it's in water, but there is no flow, so now I have a steel liner on one side and I've got water coming in, but it can't go anywhere, and I have no flow, that's not bad. Once you establish the basic environment it protects the steel. There is no corrosion of the reinforcing steel. It's not detrimental to the concrete structure. Ergo, it's not a problem.

MS. TRACY: How is it that you know that there is no corrosion of the reinforcement steel?

MR. DURR: Because the environment created by concrete itself protects the reinforcing steel. The chemistry of concrete itself creates a very basic pH.

MS. TRACY: Literally.

MR. DURR: Literally. And we know that that protects the steel in a watery environment.

MS. TRACY: Therefore, it's only when that base material leaches out, that you reach a point.

MR. DURR: Yes.

MS. TRACY: What you're saying is that that material will not leach out because there is no flow.

MR. DURR: No where for it to go. There is no flow of water around the containment.

MS. TRACY: That addresses the question about the containment possibly having problems. However, what about the leaks in the equipment vault, the primary auxilliary building, the waste process building, and the electric cable tray tunnel where there is flow?

MR. DURR: As we explained in the report, we have taken water samples both inside and outside the walls and looked at chemistries, because here again, that same concrete is protected because of the high basic pH that it sees that the steel is in, and the concrete provides that. So if we don't see a big change in the water chemistry from outside and inside, then we know that that steel is still protected.

MS. TRACY: Right now.

MR. DURR: Yes.

MS. TRACY: Is this why you have said

that it's not a safety problem right now?

MR. DURR: Yes.

MS. TRACY: Meaning that if the base leaches out, and when you do your pH tests it shows that there has been a problem that way, or might even show that there's some rust happening, your water tests could show that, and then you would consider it to be to a safety problem.

MR. DURR: But you have to understand that there are a lot of buildings, skyscrapers and everything else, that are below the water table that are constantly seeing water. To my knowledge -- I'm not an expert in concrete. Maybe Tony can add something. Suresh is not here. This is his area. I don't know of any concrete structures failing because of water leaching the silicates out of the concrete and --

MS. TRACY: However, if there was a previous report where it was mentioned that there could be -- for one thing, the water-proof membrane has apparently failed.

For another thing, the report mentioned that this corrosion of the reinforcement bar could be a problem in the future. So apparently

whoever wrote that report -- I don't know if that was you.

MR. DURR: We're watching it. We're monitoring it.

MR. MANOLY: All supports of bridges are under water.

MS. TRACY: Yes, that's true.

Another concern that I had based on both 87-07 and 86-52 was the fact that there are new leaks; that there is not a problem that's been contained; that leaks are increasing, and I understood that this was perhaps due to the fact that they have discontinued their dewatering program because construction is complete.

MR. DURR: One of the things you need to remember is -- I don't need to tell you because you were there -- but you had an inordinate amount of rain during that period that we were up there looking at that. The water table is probably much above its normal level.

MS. TRACY: Right.

MR. DURR: So that would account for the new seepage that you're seeing. When we talk about leaks, we are talking about a puddle on the

floor. We're not talking about something that's a torrent coming in.

MS. TRACY: I didn't imagine a torrent, Jacque.

MR. DURR: It's like a leaky basement. We're talking about very small amounts of water permeating through the concrete, and during that period they not only stopped the dewatering, but you had heavy rains in that area during that period.

MS. TRACY: I understand that.

One question I have about these leaks and the new leaks as well is, is the plant perhaps settling and that's why these things are occurring?

MR. DURR: I'm glad you asked that question.

MS. TRACY: I'm sure you are. It sounds like you have a dandy answer.

MR. DURR: No. This is where we told you that we had consultants in. We weren't so much concerned about the cracks because there was water seeping through. We were concerned about the cracks because some of them had the indications that they could have been settlement cracks. We've had consultants from Brookhaven National Laboratory come

in and do an independent evaluation and assessment of those cracks in the waste process building and the other areas, and they say not to worry. That plant is built on solid rock. There is nowhere it can settle unless New England is sinking into the ocean.

MS. TRACY: That could be a problem.

MR. DURR: We very well established that. We had a meeting with UE&C in Philadelphia because that's where their home address is, concerning just these cracks and settlement, and they went back and did a review, plus our people from NRR, and the consultants have looked at this and it's still under review.

MS. TRACY: NRR?

MR. DURR: Yes, Nuclear Reactor Regulation. His office in Washington, the licensing people.

MR. RICHARDSON: Have you identified the cause for why you've still got leaks developing?

MR. DURR: The reason that you have leaks developing is just as you stated, that the waterproof membrane has obviously been ruptured, and there is nothing you can do about that. That's there.

MS. TRACY: So it seems as if you have sort of a multi-barrier situation here. You have your waterproof membrane, you have your concrete, and you have your rebar inside, and probably other things too, like in containment you have your steel membrane. It seems that if there was a waterproof membrane put in there, it was put in for a good reason.

MR. DURR: True.

MR. RUSCITTO: There is no waterproof membrane. I think Jacque is talking about that in a general sense as a barrier to water. There is no physical piece of plastic or rubber that is installed throughout the wall.

MS. TRACY: Are you sure?

MR. CERNE: It's on the outside next to the ground level.

MR. RUSCITTO: It's waterproofing.

MR. CERNE: Let's get back to what the situation is now. If you're saying that the waterproof membrane as designed shouldn't have failed, I'll give that. The point is, you analyze what you're seeing right now, water coming through the cracks.

Are the cracks' structural nature that they would detrimentally affect the building as it's designed? Our answer to that so far has been no, although it's still under review by people in NRR.

The second question, is the water affecting the rebar detrimentally, and the answer to that is no.

MS. TRACY: So far. And you are monitoring it on a regular basis.

MR. DURR: That's correct.

MR. CERNE: And we have open items to track that.

You want to get back into the process of the way things happened, and we want to look at the result. Is the plant built correctly as it now stands? That's why when we look at some of these concerns from the back end, we are looking at their impact at this point in time.

MS. TRACY: I understand that. Just as you understand that I attempt to look at the whole process because I'm dealing with people who have been involved in the ongoing process. So sometimes I raise issues that may seem as if they're process issues, but they actually come down to being things

that you're dealing with on a very concrete basis, shall we say.

MR. GREENSTEIN: Are you saying that there are new cracks developing?

MS. TRACY: Yes.

MR. CERNE: No, not new cracks. Because the water table may have risen, either by stopping the dewatering process around the plant which is normally only there --

MR. GREENSTEIN: There's leakage.

MS. TRACY: It's new leaks.

MR. CERNE: There's new leakage. It's exposing existing cracks. That goes back to the basis that concrete does crack, and these cracks have not evidenced themselves as structural cracks. There are no settling cracks, no shear cracks. These are cracks that don't affect the structural integrity of the concrete of the building.

MR. GREENSTEIN: And the increased water table is just exposing them for the first time.

MR. DURR: That's right.

MR. CERNE: And depending on where the water table is in the future, may either expose them again, or not expose them.

MR. GREENSTEIN: You're saying this problem is under review now. Is there a timeframe on this review? Is it an open-ended review?

MR. CERNE: It's an open-ended review because we've asked the question, whether this would affect anything -- we have to always ask the question for any of our open items, which these constitute 2 open items, whether they would affect the delay of the issuance of a low power license, if it's issued, and our technical experts have come back and said no.

MR. GREENSTEIN: So at this point in time it's not a problem.

MR. CERNE: That's right.

And it's not a problem for the future as they see it right now because they're willing to give a low power license, aside from other issues that are currently under litigation. On these specific issues this would not delay issuance of the license because it does not have impact on the health and safety of the public.

MR. DURR: I think this is a good example of where a concern was raised by an alleger which, during all the review of that concern, we have expanded the scope. Because from a professional

aspect of it we looked at it, and we didn't see much problem with the water seepage, but we did see crack patterns that caused us concern about the settlement question, shear cracks, structural damage, these kinds of things, which go far beyond what ELP originally asked.

The fact is, we have a structure that we are looking at now, even in more depth than the ones that you were talking about, for totally different reasons, because we went back and took these other looks. These are the ones that we made and resolved in reports.

MS. TRACY: Are you actually saying we are cooperating?

MR. DURR: We are cooperating? Yes, we are.

MS. TRACY: I have a couple of other issues on this particular item. One is the problem with repairing the cracks, in other words, stopping the water from leaking.

MR. DURR: They attempt to do that. But as every homeowner has tried to stop the water in their basement, sometimes you're successful, and sometimes you're not.

MS. TRACY: Thus far, it's not been successful; is that correct?

MR. RUSCITTO: That's correct. In some areas it has not been successful.

MR. CERNE: In some areas the natural process stops the leak.

MR. DURR: It heals itself.

MR. CERNE: The leaking of the sulfates and whatever is in the concrete actually plugged up the hole, the effervescents.

In other cases they've attempted repair, and it's worked. In other cases they've attempted repair, and it hasn't worked.

Again, back to the bottom line. Assume it doesn't work, and it's not going to work for the 40-year life of the plant. What is the impact?

MS. TRACY: Yes.

MR. CERNE: That's what the unresolved items are.

MR. DURR: I guess your original question, and this is day-to-day, I think, if I'm not mistaken, but the original question was that they used a material other than what he thought should

have been used.

I think from an engineering perspective it doesn't make any difference which one of the crack sealers that you use. Once the hydraulic pressure becomes more than what that sealer can withstand, it's going to leak again. That's the question that he's concerned with. He thought they ought to use brand X, and we used brand Y.

MS. TRACY: No. He was concerned because he felt that the particular brand that they were using would not work. He wasn't recommending a brand himself. He was saying the repair material that he believed them to be using was not working, which apparently is, at least in some instances, the case.

MR. DURR: In some cases it works, and in some cases it doesn't. Here again, it's a function of whatever the hydraulic pressure is on the other side, it's going to overcome whatever you put in there. If the elevation head gets high enough, it will seep through whatever you put in.

MS. TRACY: It seems almost -- I hesitate to use lack of structural integrity, the problem with these cracks. Seabrook sits on an

earthquake fault. Do you think that these cracks would be --

MR. CERNE: That was part of the design review. When we say structural integrity of the building, it's not meaning structural integrity only now. It's structural integrity of the building as designed capable of withstanding an intensity level 3 earthquake.

MS. TRACY: Because you are mentioning that you checked out whether these cracks could be a problem of settling, and the fact that it's sitting right on bedrock, and I would presume if there were an earthquake, which there are from time to time, that that would sort of change the situation.

MR. CERNE: It would, if designed for modified locality intensity level 8 earthquake. These cracks have no bearing upon that design. They are not structural in nature to the extent that they affect the design of the plant to withstand the highest earthquake that it was designed for.

MR. DURR: Most people don't understand it, but all concrete cracks.

MS. TRACY: I understand that, Jacque. We've had this conversation many times. All

concrete cracks. All concrete is porous. Yes, I do understand that. I believe you.

MR. DURR: If you don't believe that, just look at my patio.

MS. TRACY: Maybe it's how you mixed your concrete.

MR. DURR: Could be.

MS. TRACY: So these tests to check the pH of the water coming through the wall, these are ongoing, the utility is engaged in ongoing tests, and will continue to do so --

MR. DURR: Until we are satisfied, or until they are satisfied and we agree.

MS. TRACY: Because it seems to me that as time goes on the likelihood of the reinforcement bar rusting heightens as the base leaches out. It seems you could test it for a couple of years and things would be dandy, and the utility could say well, it's fine. No need to test anymore. That decision to stop testing could occur right when you might need it the most. So right now, it's considered to be an ongoing program.

MR. DURR: That's correct.

MR. RICHARDSON: Did you say that

water from outside the walls is being monitored as well?

MR. DURR: We used that as a base reference. I don't know whether we're testing the water outside now because I don't think it's changed. But I think the program that they have does definitely monitor the water coming through the wall. I don't know what the specifics of that test program was. That was Suresh's area.

MR. CERNE: That was one of the issues that was also turned over to the NRR for review. One of the two unresolved items talks about water chemistry contro .

MS. TRACY: Do you all have any other comments on this section?

MR. DURR: Not that I'm aware of.

Let's go on to the next one, 2.5. You have no comments on that. That was Cadweld splices.

2.6?

MS. TRACY: I assume this is Harold's?

MR. GRAY: That's right.

MR. DURR: What are your questions concerning the fire protection system?

MS. TRACY: This deals with the problem that was first mentioned regarding the fire protection system, what was first raised by Raymond Lavoy as being as being sediment, but which was defined by you all as being microbiologically induced corrosion. And having read, probably not as much as you have, on the issue of biofouling in microbiologically induced corrosion, it seemed that certain ongoing problems, current problems at the plant were also caused by MIC. So that is our belief. I would like to know -- you might have something to say about that.

MR. CERNE: Yes. I think the ongoing problems that occurred at the plant, which have not arisen from allegations, but from licensee identified items which needed correction, and we were informed about them through the proper channels, have given us an opportunity to look in the service water system, and to visibly inspect the heat exchangers, to visibly inspect the strainers, to have chemical samples taken on the wall where corrosion was exhibited to check for MIC. And the answer is that biofouling is not a problem at Seabrook. MIC is certainly not a problem in the service water system.

So the premise of your statement is exactly opposite, borne out opposite by our ability to independently inspect the system because it was open for other problems.

MS. TRACY: What caused the pitting and corrosion on the heat exchanger tubing?

MR. RUSCITTO: One was the general seawater copper nickel tubing corrosion which is typical of heat exchangers, and the other one was caused by cavitation which can also be seen in any fluid system. These are typical engineering problems that are found throughout the industry and have various solutions.

MS. TRACY: You're saying it's electrolyte corrosion?

MR. RUSCITTO: Cavitation is the formation and subsequent collapse of vapor bubbles in a fluid stream due to pressure changes. It causes shockwaves when the bubble collapses. We're talking about it on a very small scale now. It will cause a vibration and errosion of the pipe.

MR. DURR: Probably the best description of cavitation I can give you is, do you live close to the water?

MR. GREENSTEIN: Yes.

MR. DURR: Do you ride on boats?

MR. GREENSTEIN: Yes.

MR. DURR. Do you see the bubbles stir up when the turbine starts the propeller?

MR. GREENSTEIN: Yes.

MR. DURR: That's cavitation. Because the propeller changes the pressure of the water and you form bubbles, and those bubbles, when they impinge and collapse, they errode away material.

MR. RICHARDSON: I have another question for you. In one of your recent reports you indicated that a check valve on the primary component cooling system had developed a pin-hole leak. Have you assigned a cause for that yet?

MR. RUSCITTO: Yes. That was not a corrosion problem. That was just a casting flaw within the body of the check valve. It was not a corrosion-related problem. It's a fresh-water system.

MR. DURR: We seem like we're getting kind of far afield here. This thing was the fire protection system. Do we have anymore questions on the fire protection?

MS. TRACY: We go beyond the fire protection system.

MR. DURR: We do?

MS. TRACY: Yes.

MR. DURR: In 86-52?

MR. RUSCITTO: All we're saying is, there is no MIC, and there is no biofouling.

MR. CERNE: This isn't an allegation. It's a statement on your part that is attempting to tie an earlier allegation, which was resolved by Mr. Gray, into things that the NRC has identified in our own inspection reports, and drawing some premise that they're related. We're unequivocably saying that we've looked at that in advance and they're unrelated.

MR. GREENSTEIN: Your conclusion that there is no MIC or biofouling, what is the foundation for the conclusion?

MR. CERNE: We've looked inside the service water system which is in question, in which MIC was not discovered -- it's totally divorced from the fire protection system. It was opened up for other reasons, some valve problems. At the time it was opened up we had the opportunity to look at the

heat exchange. We had the opportunity to look inside the pipe. We had the opportunity to look at the strainers to see the amount of debris that had accummulated.

It was an extremely clean system, probably because you got a long tunnel that chlorinates. Biofouling was not a problem. Chemical swab samples were taken on the piping. That chemical swab sampling and analysis will tell you the amount of bacterial contamination on the pipe wall, and it was way below the level at which you would see microbiologically induced corrosion.

MR. GREENSTEIN: Who did the analysis?

MR. CERNE: The licensee and an independent contractor. And we reviewed the results.

MS. TRACY: Who was the contractor?

MR. DURR: I guess to put this in focus, the original issue was sedimentation in the fire protection system. And from that evolved -- the only way we got into microbiologically induced corrosion was the fact that that was in conjunction. The licensee was replacing some piping at the time that the alleger saw other piping that had concrete

lining in it, and he assumed that these 2 were connected, and they were not connected.

MS. TRACY: No. He saw -- your latest explanation was that he did see sediment. You are allowing them that. But that he saw sediment in pipes which had been removed from the fire pump house outside the pump house for cleaning.

MR. DURR: No. They were concrete lined.

MS. TRACY: No.

MR. DURR: They were cleaning outside, and there was pipe outside the pump house that was concrete lined that was also exposed.

MS. TRACY: Yes, Jacque, but what Raymond Lavoy saw was not concrete lined pipe. He saw pipe with sediment in it, and that pipe with sediment in it was not the pipe that was in the ground outside the fire pump house. It was apparently, according to your explanation, pipe that had been removed from the fire pump house for cleaning outside the fire pump house. So he did see pipe with sediment and MIC in it.

MR. CERNE: It's granted. Again, at the risk of being adversarial here, let's bring us

back to the present. The fire protection piping and the MIC which was admitted to occur, and which was cleaned up by the licensee, has been addressed by Mr. Gray in NRC inspection reports.

What you appear to be presenting here is some transition using our own reports to try to tie that with MIC in the service water system or biofouling in the service water system, which we have said does not exist because we've looked for it.

MR. GREENSTEIN: Getting back to the original point about the fire protection system, there was some MIC and sediment which has been removed. Was there any discussion as to how the sediment got there in the first place?

MR. CERNE: The MIC?

MR. GREENSTEIN: Yes.

MR. CERNE: Yes, and basically what you had is, you had a certain -- fire protection piping was first filled with water from the site which had some organic mechanism -- organic material in it, and as it sat stagnant for several years, or over the course of construction the MIC process developed.

MR. GREENSTEIN: And the pipe was

removed?

MR. GRAY: The majority of it was cleaned.

MR. GREENSTEIN: Is it a likelihood that this problem is likely to redevelop?

MR. CERNE: No. We've fixed it. Part of the corrective action was to put -- the first consideration was for its ozonater, which if you flood the water with oxygen, you'll kill the bacteria, and then the licensee decided to treat it with ultraviolet light which also inhibits corrosion of the bacteria in the future. So for future systems where this could occur, like fire protection, the new system that they have in place will prevent it from recurring. Of course, their water chemistry, we'll continue to check it.

MR. GRAY: And another thing, they are using now Seabrook drinking water for the fire protection system, not pump to groundwater.

MS. TRACY: They were using groundwater that was pumped right out.

MR. CERNE: Yes. That was part of the source of the organic material.

MS. TRACY: They weren't using well

water back then?

MR. GRAY: That was a part of the cause of the original problem, the pump groundwater had more organics in it --

MS. TRACY: So now they're using treated water.

MR. GRAY: -- sufficient organics to cause this problem under conditions of long-term stagnation.

MR. GREENSTEIN: You're saying they installed ozonaters?

MR. CERNE: No. Ultraviolet light. Ozonaters would have been one option. They established the ultraviolet light option.

MS. [illegible]: Is that an ongoing program, the ultraviolet light?

MR. CERNE: Yes.

MS. TRACY: What do they do? Beam it on the water before it goes into the pipes?

MR. CERNE: I'm not exactly sure how the process works, but basically it's at the water treatment facility that they actually treat it with UV. So the water coming into the plant systems -- of course, some of the more critical systems in terms of

reactor coolant water and secondary and tertiary systems are demineralized water anyway.

MR. RICHARDSON: How is that done?

MR. CERNE: The demineralizing process?

MR. RUSCITTO: It comes through a demineralizing plant that uses demineralizers.

MR. DURR: Have you ever seen the little bottles that you get for your iron at home to take the hardness out of the water that has little pellets in it?

MR. RUSCITTO: That's a demineralizer.

MR. DURR: It's the same kind of thing.

MR. RUSCITTO: It's ion exchange.

MR. DURR: It's an ion exchange process. That's what the little brown beads in the bottle are.

MR. RUSCITTO: A demineralizer is a big, huge tankfull of that.

MR. RICHARDSON: All right. We're not exposing it to great degrees of heat then?

MR. DURR: No.

MS. TRACY: I have a question

regarding the fire protection system and why MIC grew there. Weren't they doing chlorination for a number of years before 1986?

MR. CERNE: Not in the fire protection system. Chlorination is in the service water system.

MR. RICHARDSON: Your report cites chlorination.

MR. GRAY: There is also chlorination in the fire protection system.

MR. RUSCITTO: In the pottable water system. That's a different kind of chlorination.

MR. CERNE: Not for the biofouling process.

MS. TRACY: It's not part of the biofouling treatment prevention?

MR. RICHARDSON: The reason I'm curious about that is, that in -- I believe it's discussed in both 86-52 and 87-07 -- there is a statement to the effect that the chlorination was instituted in 1983, and that the piping was disassembled in 1986. Why is there a difference of 3 years between when the chlorination process was started? The way the report reads it suggests that it was in relation to the fire protection

microbiological problem. If that is the case, why was the piping dismantled 3 years after the chlorination program was started?

MR. DURR: The question, I guess, is, where are you going with this. What difference does it make?

MR. RICHARDSON: Basically your report suggests that a treatment program was started in 1983, and that the piping was dismantled and cleaned in 1986.

MR. DURR: So?

MR. RICHARDSON: What I'm asking is, was the problem discovered after the chlorination program was started?

MR. DURR: I guess the question is, when did they first discover that they had a MIC problem.

MR. RICHARDSON: That's part of the question, yes.

MR. DURR: Do we know that?

MR. GRAY: I don't recall the answer to that.

MR. DURR: Is that in a report?

MS. TRACY: No.

MR. CERNE: I think we have that in one of our resident reports.

MS. TRACY: I think that a corrolary to the question, or what I was leading to is -- and also when you answered about whether they're chlorinating that in the fire protection system -- I had understood that chlorination was taking place as part of the chlorination program to do away with biofouling, and that it was being done in the fire protection system too, which would mean that it wasn't working, if it had been going on for 3 years.

MR. RUSCITTO: The chlorination in the fire protection system is related to the chlorination of the pottable water system for drinking. Just like any other city water supply, it has a chlorine residual.

MR. CERNE: To answer Doug's question, and I'm going from memory, but as I recall, the resident report that first addressed it, because we knew about the problem as soon as the licensee did, was at least a couple of years after 1983.

MS. TRACY: So 1985?

MR. CERNE: To my memory, yes.

MR. RICHARDSON: That chlorination

program then is not intended to address microbiological corrosion?

MR. CERNE: Not for the fire protection. It's intended to address biofouling in the service water system because there's massively more amounts of chlorine because it's not pottable water.

MR. GRAY: We may have a conflict. As I recall, I believe I saw a chlorination system installed in the fire pump house system, and that it had some intention to act on this MIC problem which had occurred in the fire pump house.

MR. CERNE: It doesn't jive with the dates we are talking about. It could have been used post-discovery of MIC to try to fix the problem.

MR. GRAY: As I understand it at this point, as I recall it, chlorination was installed in the fire pump house water system after the discovery of the MIC as a part of the corrective action to prevent it from recurring.

MR. CERNE: I have no problem with that statement. What I'm saying is, if they stay chlorination was installed in 1983, I don't have any facts that would argue that. I'm just saying that if

that were true, that was not to combat MIC because they didn't discover MIC in 1983.

MS. TRACY: And at that time they were using groundwater. They weren't using drinking water, which is slightly chlorinated anyway. So it seems like there was no chlorination program going on to prevent, to combat or prevent MIC in the fire protection system until after the problem was discovered.

MR. CERNE: Based on our own confusion from memory here, we would have to go back and get the specific dates. From what I recall, MIC was not discovered in my mind until like a 1985 timeframe. So if your dates indicate something happened earlier, I don't believe that was related to MIC.

Let me read the section which Harold has documented. "Chlorination of the fire system water which was initiated in October, 1983 was noted to be in progress. This chlorination was initiated as a measure to prevent microbiologically induced corrosion in the unlined portions of the fire protection system piping".

I won't dispute what Harold has researched, more than I have researched. What I'm

saying is, they didn't discover MIC prior to 1983. They may have had a system in place in part to prevent it, but they didn't identify it as a problem to be on circa 1985 timeframe.

MS. TRACY: My point is that if there was chlorination going on to prevent it, and after the program had been going on for 2 years they found it to be a fairly serious problem, it seems as if that program wasn't really effective against MIC, which is why you are doing UV light now, right?

MR. CERNE: Yes.

MR. DURR: Also, you have to understand they changed the source of water.

MS. TRACY: Right, from groundwater to drinking water.

MR. RICHARDSON: When did they change the water source?

MR. DURR: I don't know.

Do we know that?

MR. CERNE: What are we getting to, the bottom line? I'm still failing to see --

MR. RICHARDSON: The bottom line is this, according to this report, the paragraph that you just read, the chlorination program was

instituted in 1983. It specifically states that it was to prevent a MIC problem. Now, in 1986 we have fire protection piping being dismantled and cleaned of microbiologically induced corrosion deposits.

MR. DURR: True.

MR. RICHARDSON: The timing there, the fact that the piping was dismantled and cleaned 3 years after the chlorination program was instituted, appears to suggest that the chlorination program was not effective.

MR. RUSCITTO: Wait a second. I don't know that we know that the fire protection system was in operation in 1983 when the chlorination was installed. Just because the chlorination was installed doesn't mean the system was operating and being chlorinated.

MS. TRACY: Let's take a break.

MR. DURR: At 12:00 o'clock I'd like to break.

But what you have to understand is, you have a lot of unknowns, and we don't have the answers to them either. The unknown is, we don't know when the MIC occurred. The MIC could have occurred before 1983, and they finally discovered it

in 1986. So we don't know that. There's a lot of unknowns.

I guess the point is, the bottom line, that the piping has been removed and cleaned, they've changed the water source, they've introduced new methods for killing bacteria, and we've tested the system, and everything works fine. So what's the problem?

MS. TRACY: I think that one of the reasons why we threw in these other systems, aside from not being completely up on the technological aspects of things, was it appeared that the chlorination program for the fire protection system was not working.

MR. RUSCITTO: I don't think you can draw that conclusion based on the fact that we don't know that the fire protection system was operating in 1983.

MS. TRACY: Right. I agree with you that we have raised more questions --

MR. CERNE: You're stilling trying to jump over the service water system, and that's not an allegation. That's some premise you have put together based on an allegation which has been

already investigated, and our own reports which identify inspection issues --

MR. DURR: Let's solve one problem. Is your problem with the fire protection system? Do you have a problem with the fire protection system?

MS. TRACY: I'm not sure today.

MR. DURR: We've looked at it. We've tested it. We've watched them test it. We were physically there when they ran water through it and performed the test. The authorized nuclear inspector for the insurance company was there. We watched him do his thing. We know the system works.

MS. TRACY: Who was that inspector, by the way? Do you recall?

MR. DURR: I don't know.

Do you know, Harold?

Harold was with him.

MR. GRAY: The company's name is there.

MR. CERNE: Kemper Insurance Company?

MR. GRAY: No. This is different. This is a company who insures the buildings against fire loss, as opposed to the authorized nuclear inspector. It's a different ballgame altogether.

MS. TRACY: Is it a different company entirely?

MR. GRAY: I gave you the company name in the report.

MS. TRACY: I think you did.

MR. DURR: Hartford, or something like that.

MS. TRACY: Yes.

MR. CERNE: Do you have a problem with the fire protection, or are you trying to flow it over to the service water system?

MS. TRACY: Yes.

MR. DURR: Because right now we don't have a problem with the fire protection system. Is there a question you need to ask on the fire protection system?

MS. TRACY: I think that at this time you have answered my questions about the fire protection system.

MR. DURR: Now, are there peripheral issues that you think that you want to discuss concerning this issue?

MS. TRACY: My feeling is at this point we have discussed the peripheral issues that I

wanted to discuss.

MR. RICHARDSON: I would like to ask one question. If the chlorination process in the fire protection system may not have worked, suggesting it as a possibility because it was dismantled and cleaned in 1986, 3 years after the chlorination procedure was instituted, are there other procedures, other than chlorinization, to treat service water, and if not, is it possible that a chlorinization process may not work in that system as well?

MR. CERNE: First of all, you're talking about much different doses. There are other processes, like thermal backflushing of the system. Where you bring in water, you throw heat out.

Secondly, you're talking about salt water versus pottable water.

Thirdly, you're talking about an ocean supply which is 3 and a half miles out.

The systems that could be detrimentally affected by, for example, the biofouling, having strainers in the system, and the microbiologically induced corrosion, you're talking about inspection processes which look for it.

And I guess finally I would just say that the reason we haven't suspected it to date is that we've checked for it in our most recent inspections, and it hasn't existed. It doesn't exist right now.

MR. DURR: Is your question relative to the fire protection system?

MR. CERNE: No. The service water system --

MR. DURR: Let him answer.

Is your question relative to the fire protection system and the chlorination? Given the fact that it may not have worked, how are we convinced that we don't have a problem? Is that the question in fire protection?

MR. RICHARDSON: That basically is the question.

MS. DURR: Correct me if I'm wrong, Harold, but on a periodic basis the fire protection system is tested?

MR. GRAY: That's correct.

MR. DURR: Flow tested. We run water through it. We make sure that it works, and that's on a periodic basis.

Now, I can get my fire protection engineer in here, and he'll probably give us a whole lot more details, if he's in today. But those systems, they do fire drills. We witness the fire drills. We witness them hooking up the hoses and all those kind of things.

So from a fire protection program aspect we have a separate group, a separate gang that goes out and looks at fire protection. We do indepth inspections in fire protection for all power plants, including Seabrook. So I really feel comfortable that I don't think we have a problem here. If MIC re-occurs, I think it will be detected, and appropriate steps would be taken to fix it because we have an inspection program that goes back and looks at the fire protection system.

MR. RICHARDSON: Are you also covering the other freshwater supply systems as well?

MR. DURR: What freshwater supply systems?

MR. RICHARDSON: Primary component, secondary component --

MR. DURR: Those are closed-route cooling water systems.

MR. RUSCITTO: You're talking about a very heavily chromated system. I am not aware of MIC occurring in a system like that.

MR. RICHARDSON: What are you chromating?

MR. RUSCITTO: Potassium chromate is put in the system --

MR. DURR: It's a corrosion inhibitor.

MR. RUSCITTO: -- to inhibit corrosion of those systems.

MR. DURR: It's like the stuff you put in your radiator. It's not ethylene glycol to prevent it from freezing, but there's also a corrosion inhibitor that's in your radiator.

MR. RICHARDSON: It's inhibited as a biocide, or just as a corrosion inhibitor?

MR. DURR: It's a corrosion inhibitor.

MR. CERNE: They're closed systems, and they're supplied from chemically controlled environments. They're not hooked into the pottable water supply, like fire protection.

At the expense of being rude, I'll say that even though Jacque is talking about fire protection piping, because that's the allegation that

was raised, we don't have an allegation before us that talks about MIC in the service water system.

You have raised, in my mind, some contentions which try to bridge a gap between MIC in the fire protection system which everybody agreed occurred, to the potential for it occurring in the service water system, and our inspections have looked at and documented the fact that that is currently not a problem. That's where we stand. We have no allegation that we're pursuing in the service water system with respect to MIC.

MR. RUSCITTO: I think that anything else is pure supposition on anyone's part, and we're just as interested as you about future possibility of MIC. But to give it anymore effort, I think would be inappropriate.

MR. DURR: That whole question is under the Hearing Board. I don't think we need to pursue it any further. That will be addressed later to everybody's satisfaction, I would hope.

At this point in time I think it's appropriate that we take a break for lunch. It's 12:00 o'clock. Let's say, we reconvene at 1:00. With that, I close the record.

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(Whereupon a recess was taken at this time.)

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(The meeting resumes at 1:00 o'clock).

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MR. DURR: Did we finish with section 2.6? Were there any additional questions?

MS. TRACY: I think for the moment we've finished with that.

I would like to, once again, refer to this proposed agenda that I brought which refers to the end part of this report and see if we can deal with some of these issues. I would like to get this entered into the record as my understanding of what this meeting was to concern, and then look at some of the specifics in here. So is it all right with you to enter this into the record?

MR. DURR: I don't have a problem with entering it into the record. I am reluctant to divert from what we were discussing in sequence here for fear that something will remain undone. If we pursue it in an orderly fashion, we'll get through all of them because it's not our intent to go from beginning to end here to answer your question.

MS. TRACY: My feeling is that our time is fairly limited now. We have about 1 3/4 hours left, and there are some fairly overriding concerns that are at the end here which are organized in a fashion in this agenda. What I would like to suggest is that we touch on some of these, and then if we have time, go back. I would rather deal with these then find ourselves in an hour and 3/4 not to have dealt with these at all, if that's all right.

We could perhaps call this Exhibit A.

MR. DURR: However you would like to include it in the record.

(Whereupon the proposed agenda was marked as Exhibit A).

MR. DURR: What specific part of this agenda would you like to address?

MS. TRACY: First, let me say that it was my understanding this meeting was to deal with procedural issues that had not necessarily been fully addressed in 86-52 or 87-07. In order to conserve our time, and since we have those issues listed, perhaps we could concentrate on a couple that are of particular concern. Essentially what this does is,

it lists the overriding concern, and then it lists the different allegations that have been made to our project that support these concerns. So under quality assurance/quality control I would like to look specifically at F, I, J, O, Q and S.

MR. DURR: F, I, J, O and S?

MS. TRACY: Q and S. Under document control --

MR. DURR: Let's do them sequentially, and then we'll get them done. What is your specific question for 2(F)? I haven't had time to read them all, but from what I have glanced at they all were discussed in either 86-52 or 87-07 in some form or fashion; is that correct?

MS. TRACY: They were acknowledged. They were not necessarily discussed in the sense that these are not specific technical issues that you can go and look at the particular weld, and for that reason you did not discuss them in any kind of detail.

MR. DURR: That's correct.

MS. TRACY: However, it's our feeling that these procedural problems, what you call procedural problems in 87-07 are issues which point

to overriding safety concerns about the plant.

MR. DURR: How?

MS. TRACY: In that they point to the fact that, for instance, quality assurance/quality control had some serious problems. If quality assurance/quality control had some serious problems, then the safety of the equipment inspected, the systems inspected is also questionable.

The same thing with, for instance, document control. You all make a lot of your judgments based on the utility's documents. If there is a problem with the documents, an unrecognized problem with the documents, then the information that you base your inspections on is also questionable.

MR. DURR: To answer that question, to respond to that, you have to understand that the NRC did, in fact, look at the licensee's documents. They also did hands-on inspections. We did as-built inspections, not only after the plant was built, but we did hands-on inspections while the plant was being built. So throughout the construction of the plant there was essentially nearly a continuum of audits being performed, not only on the hardware and the installation and the implementation of the

procedures, but the quality assurance aspects of the plant itself, and the implerentation of the licensee's quality assurance program.

One of the main underpinnings of the NRC's inspection program was that by rule we require the licensee to have their own quality assurance/quality control prcgram. We require them to put the people in place and to have a viable program, and we audit to insure that that quality assurance program is viable and functions.

Now, are you saying, were there isolated cases wherein people didn't follow procedures? More than likely. Here again, that's the human element, and you can't make that an absolute. No one can make anything like that absolute.

MS. TRACY: But we are not saying there's been isolated cases.

MR. DURR: We haven't seen anything to indic.te that that's true. Witness the fact that if there were serious breakdowns in quality assurance/quality control, they would have manifested themselves somewhere in the hardware because that's the ultimate concern. Those programs are in place to

insure that the hardware, the physical plant itself is built according to the design and the intent. So if there were series breakdowns within that program, which I'm not sure that at this point in time anybody would ever be able to prove or disapprove, then what we have to look for is where did that manifest itself as a deficiency in the plant.

With all the allegations that ELP has given us and other allegations, we have not been able to ascertain that it has manifested itself in a deficiency within the plant, and that's what's important. Because whether the QA/QC program did or did not function appropriately back during the construction of the plant, I don't think anybody can determine that today. That's history.

So what we have to be concerned with is, how did that show up in the plant as a deficiency. And not only through our construction program, but through our construction inspection program, our as-built programs, our independent design audits, and the focused allegations that you have given us, we have not been able to show that quality assurance was deficient in any of those instances. Ergo, we have to assume that that still is

true; that quality assurance/quality control did not suffer from significant breakdowns because we don't have anything to prove counter.

MS. TRACY: You may feel you need to assume that. However, having talked to a number of quality assurance engineers, who all had serious criticisms of the program, who were told that they were -- forced might be too strong of a word -- were pressured in a serious way to pass on equipment and items that they did not feel comfortable about, and that that was a continuing procedure that they were subject to, and that if they were too careful in their checking of quality assurance, that they would face firing, that is a concern which reflects on the safety of the plant. Because they are talking about, not just isolated instances, but about an ongoing situation that they had to deal with.

MR. DURR: If that's the case, then they need to give us a specific where that pressure resulted in a deficiency in the plant that they bought off or were forced to buy off on, and they know it's deficient, and we can go out and inspect that and confirm that, and we can verify that very aspect. If those individuals have knowledge of just

that condition, we can inspect that. All they have to do is give it to us, and we can verify that, and then we can make that case.

But as to date no one has been able to give us a specific that resulted in an equipment deficiency that we can go out and inspect and verify that yea and verily the quality assurance/quality control program did not function. We don't have anything, and that's what we keep asking for you to give us. If you have that kind of knowledge, we need that very specific information because that will prove your case.

MS. TRACY: It seems that we're caught in a 'Catch 22' because these people no longer work at the plant. They don't have access to the kinds of records that they need to exactly pinpoint their concerns.

Another part of that 'Catch 22' is if they were to exactly pinpoint their inspection sheets, then they themselves are pinpointed, and they're absolutely positive that they would be blacklisted. Many of them still work in the nuclear industry. So it is, as I say, a 'Catch 22' type situation in many cases. They don't have access to

the proof that you need to even investigate it because it's proprietary information at the plant. They didn't leave with the documents.

MR. DURR: I understand that, but the individual having that kind of knowledge would be able to point out some specifics, or at least give us an area to look in. For instance, if he just says pipe supports in a certain area, we can go look at pipe supports in a certain area. We've looked at hundreds, literally hundreds of pipe supports, and we couldn't find anything wrong.

MS. TRACY: What you're saying is that it's irrelevant to you whether or not quality assurance works.

MR. DURR: It's not irrelevant. No, it's not.

MS. TRACY: Because what is relevant to you is the results of quality assurance/quality control. If this person says I was forced to pass on X number of welds that I was not sure about --

MR. DURR: I understand.

MS. TRACY: -- and they weren't sure. And you say okay, show me exactly those welds. Now, this might have been in the course of 3 days of work

and they had worked there for months. You go and look at those welds, and you say well, there's no problem with these welds, then it's resolved to your satisfaction.

That does not deal with the issue that quality assurance did not work. As a procedure it did not work because people felt pressured to the point where they went along with what the utility wanted, rather than reporting problems.

Another example, perhaps an example of that is, I'm sure you're aware of the case of James Padavano, who falsified documentation on apparently thousands of welds, was arrested, convicted, and has subsequently said that he was a scapegoat, and it's my belief he probably did it to more of an extreme degree than other inspectors, but he said that he was a scapegoat; that what he did was common practice. That has been substantiated by other QA people who I've spoken with who said, it's too bad about James. He was a little extreme, but what he did was not unusual. To me it would seem that would be a matter of concern.

MR. DURR: It is a matter of concern, and we looked at that. But based on the fact that we

can't find anything wrong, even before the allegations came in, we've gone back and looked at our inspection record, independent of all that. We don't find any underlying problems there, other than the ones that were identified, addressed and resolved.

Granted, there were problems back there. Our inspection reports reflect that. It also reflects the fact that we followed those things to resolution. So we aren't just saying that we can't find anything wrong. Ergo, we're not worried about it. That's not true. I don't think that's a proper characterization of it. We are always concerned.

What I'm saying now is, whether it did or didn't work back then becomes moot when you go look at the final as-built condition of the plant. We have thoroughly looked at the hardware. We have thoroughly reviewed the start-up and testing process. We had somebody up there almost continuously through that start-up testing program and the pre-operational tests. All of those things are designed to make sure that that plant is safe to operate. So far we don't find anything to indicate otherwise.

Now, granted there is underlying concern in the community about the safety of the plant, and we appreciate that.

MS. TRACY: It's not just the community, Jacque. It's people that work there who built it.

MR. DURR: You have to understand that we can't convict them until we have some evidence. We don't have any evidence, concrete evidence that's going to convince anybody that that plant is unsafe. I cannot make hollow allegations about the safety of that plant. I have to have something substantial to prove my point. That's what we are asking for, and so far it's not forthcoming. Everything that we have chased, we already knew about it, and we were already pursuing it. The licensee had properly documented it and had identified it himself and was pursuing it. We have multiple indications of where people saw things that they thought were wrong, and they have been at that point in time wrong, and they were pursued within the program.

MS. TRACY: Let's talk about some of these specific issues.

MR. DURR: Okay. Which one?

MR. GRAY: Do you want to try "I"?

MS. TRACY: Let's deal with F for just a second.

MR. DURR: Okay.

MS. TRACY: When construction procedures were violated, procedures were rewritten to allow the violations to stand. Procedures were implemented to eliminate inspection tests.

Was that a common way of dealing with problems when construction procedures were violated?

MR. DURR: In F, here we don't have any specifics, do we, just this statement? We have this statement as it stands by itself. We don't have any specifics to point where things were changed improperly to circumvent some problem. We don't have anything of that nature. So all we're going on is this statement. This is the alleger's characterization of what he thought he saw.

Do they revise procedures? Yes. Are procedures rewritten because there may be a design problem or some other underlying problem? Yes, and there is mechanisms for them to do that, but it has to be reviewed and engineeringly acceptable to do that. They just can't arbitrarily go out and say

gosh, I can't do this. I'll rewrite the whole procedure to go around it.

That's all a controlled process. That all comes under that umbrella of quality assurance. We require them to have procedures that allow them to make these changes in a controlled manner.

MS. TRACY: Let deal with "I".

MR. GREENSTEIN: Can I ask a question?

MR. DURR: Sure.

MR. GREENSTEIN: During the 21,000 hours that the NRC was doing irspections, did NRC personnel ever witness any violation of construction procedures?

MR. DURR: Oh, yes.

MR. GREENSTEIN: Was it endemic?

MR. CERNE: Endemic in the sense that the causal analysis had root in some generic problem, no. But it has to be reviewed for that reason. There may be a cause that goes beyond the individual guy who just failed to follow procedures. Maybe there was a training problem, maybe the instructions were written unclearly, maybe really what they were asking him to do was too rigorous, and code allowed looser things to be done. That's what Jacque was referring

to. Sometimes you can change procedures, and still meet the construction codes.

All those things are reviewed, and when we do write a violation for failure to follow procedures, which is a violation of 10 CFR 50 Appendix B, we request the licensee, not only to address corrective action for a specific violation, but also how they will correct it to prevent it from occurring again.

MR. DURR: Where it has implications of spilling over into other areas, we also ask them to address that particular aspect. So they just don't solve John Doe not putting in something properly, but look at the broader aspects of why did that occur, and what other areas could have been impacted by that same deficiency.

MS. TRACY: Doug, did you have something you were going to say about that?

MR. RICHARDSON: Yes.

I remember back in 1986 I told you that the B31.1 as-built program had been dropped because it was getting too costly to implement, at least that was my understanding. It seems to tie in with a number of problems that Pullman-Higgins had at

that time. The conditions that were going on at that time appear to have been continuing for sometime after that. In the 84-07 construction assessment team report it is also mentioned that that -- I believe it was the piping support as-built program was dropped. This was conducted by United Engineers at that time; is that correct?

MR. CERNE: Well, Pullman at that time was still doing the pipe supports.

MR. RICHARDSON: Pullman was doing QC, I believe, and United, if I remember correctly, was doing the as-built work.

MR. DURR: Can we find the specific point in the report?

MR. RICHARDSON: Yes. It takes a little bit of discussion to get to.

Basically United's piping support as-built program had been identifying deficiencies in approximately 75 percent of the supports they looked at. The reason that the as-built program was dropped was claimed to be because they were overly restrictive in their identification of welding deficiencies. But the deficiencies that they were identifying extended far beyond simply weld

deficiencies.

MR. DURR: Is this the B31.1 as-built?

MR. RICHARDSON: I don't know if this is B311 or safety. I believe at the time the CAT team was looking at safety equipment, but I am not completely sure. We can find that out easily enough by going through the report.

At the time I was working for Pullman I was told not to write non-conformance reports in such a way as to indicate that Pullman craft people were to blame; that basically that they had done faulty work. It appears from the discussion in the reports up and through dealing with that era that Pullman was under a lot of pressure at the time for the quality of their work. They got a 3 in the SALP in '82, and a 3 in the SALP in '81, and the '80 SALP was said to have been pretty bad. At the end of '82 there was a massive reorganization of Pullman's responsibilities; is that correct?

MR. CERNE: I think it was a little bit later area, but you are correct. There were several recurrent SALP's where piping and pipe supports was a problem, a problem in the sense that

that we gave them a category 3.

MR. RICHARDSON: Some of the stuff that shows up, for example, in the '82 CAT, you have engineers who are dispositioning NCR's, particularly the ones that were dispositioned accept as is. Your inspectors reviewed something over 100 NCR's. The wording of that report indicates that not some of the ones that were accepted as is, but enough of a majority of the ones that were marked accept as is, that they simply said those marked accept as is were not adequately reviewed, and that the engineers who did those reviews were not qualified to do that.

If this is the case, how can you be sure that they were reviewed adequately all the way along the line?

MR. DURR: We said that in our inspection report 86-52?

MR. RICHARDSON: I'm sorry. 82-06.

MR. DURR: That's outside the scope of this. This is 86-52 and 87-07.

MR. RICHARDSON: That inspection was done at the time period approximately that I was working at Pullman. I told you about problems that I thought existed in Pullman's as-built program that

appear to be related.

MR. DURR: I don't follow you.

MR. GRAY: 82-06 was done during the time that everybody was laid off at the site.

MR. RICHARDSON: No. That was 84-07.

MR. CERNE: 82-06 was the team you led up there, Jacque, the original CAT.

I feel that you are taking our inspection reports and saying that we're smart enough to identify items, but we're not smart enough to resolve the resolution of the problems we identified.

We identified that there were problems with Pullman-Higgins. We awarded category 3 ratings because areas needed correction. Those areas were re-reviewed, and there were some recurrent problems. Jacque's report, the recurrring or repetitive resident reports, the specialist's reports all contributed to those findings that led to those SALP ratings. So if you say were there problems at that time, without getting specific, yes, there were. Otherwise, they wouldn't have gotten category 3 ratings. I guess what Jacque is saying and what I'm saying is, what does that have to do with this issue

that is the subject of the ELP allegations at this point?

MR. RICHARDSON: According to your reports, then and on to about '84 apparently there was in this area inadequate review of the NCR's as to whether the accept as is dispositions were really valid. In the 1984 CAT there is an extensive discussion of failures by the United as-built crew to identify and properly record non-conformances.

MR. DURR: I'm curious. What is the point that you are trying to make?

MR. RICHARDSON: Given that you've got failures over this long period of time to adequately maintain a quality assurance program, how can you say that the quality assurance program demonstrates that the plant is safe, when you've got non-conformances that weren't evaluated properly, non-conformances that weren't answered, that weren't properly reported?

MR. DURR: Let me answer your question. First of all, when you say quality assurance/quality control, there were a multitude of contractors on that site, Pullman-Higgins being one --

MR. RICHARDSON: But a very important one.

MR. DURR: -- which we singled out as being a recalcitrant performer. The NRC identified them as a poor performer, and we applied pressure to the licensee to get that act straightened up, so to speak. Is that correct?

MR. RICHARDSON: That's my understanding.

MR. DURR: Now, you have to understand that Pullman-Higgins -- but there was also a civil structural contractor on site, there were people putting in the HVAC, there's the electrical contractor. You have to understand, all those aspects, nobody has ever attacked that. So to have a total breakdown of the quality assurance program you have to have all these people making mistakes, and that wasn't the case. That's not what I'm hearing.

What I'm hearing is, you have a specific problem with the Pullman-Higgins quality assurance/quality control program which we identified, and which we forced the issue to get the licensee to straighten it out. So now, what's the problem?

MR. RICHARDSON: Part of the problem is that Pullman's deficiencies were identified for a period ranging for several years and were not corrected.

MR. DURR: That's right. But we finally fixed that problem. That's all acknowledged in another report.

MR. CERNE: There is another factor here that bears directly on the point you're trying to make. You're quoting from our SALP's, and our SALP's clearly identify in the write-ups, if you will research them, that the problems that were identified with Pullman-Higgins were primarily process control problems which did not necessarily result in deficient hardware.

MR. RICHARDSON: Then how do you account for 75 percent of the supports that the United as-built team were inspecting showing up with deficiencies after they've been through Pullman's QA? And this is in 1984. Your problems were supposed to have been corrected.

MR. CERNE: We've reviewed that process -- it's a long story that has nothing to do with the ELP allegations. But the as-built

inspectors were using different criteria than would be used by QC inspectors in determining what was acceptable and what wasn't acceptable.

MR. RICHARDSON: Why would they be using different criteria? Aren't we all supposed to be working toward the same standards?

MR. MANOLY: What deficiencies are you referring to? You said 75 percent. In what area?

MR. RICHARDSON: Let me find the report. It's your 84-07 construction assessment team report.

MR. CERNE: The as-built inspection criteria are different. The whole process of as-building is to document, like you were doing, dimensions and things that can be done for stress reconciliation of the piping program.

The QC inspection is totally different, like we were talking about before. A QC inspector makes a judgment based on criteria which he has to be trained for. There is a big difference between as-built inspection -- it's not even inspection-- the as-building process, and the QC inspection program.

MR. RICHARDSON: We were trained

through probably the same criteria. I had a Level 1 certification --

MR. DURR: You're making statements that I don't think that you can adequately support, Doug. Were you ever a quality assurance/quality control inspector?

MS. TRACY: I think that's fairly irrelevant in the issues that we are discussing here.

MR. DURR: No. He's making assertions here and casting dispersions about a program, and I'm trying to figure it out.

What's your technical qualifications that allow you to do this?

MS. TRACY: We've been through this before.

MR. RICHARDSON: The information that we generated was used in preparing --

MR. DURR: The last time we talked about this, I asked you what your job title was, and you didn't even know what your job title was.

MS. TRACY: We're getting off the track.

MR. DURR: No. He keeps bearing down on this point, trying to make these assertions that

are not relevant to what we have in here.

I just want to establish the fact that you are making questions, not allegations. I can understand your not understanding some of these things and having problems assimilating all this.

MR. RICHARDSON: Let's read you a line here from the report.

MS. DURR: Wait a minute. Is this relevant?

MR. RICHARDSON: It may answer your question as to whether I'm qualified to talk about this stuff.

This is section 3, page 9 of your 84-07 CAT report. The second paragraph starts off, in addition to the fact that ANSI certified inspectors (UE&C as-builders).

MR. DURR: So what?

MR. RICHARDSON: So was I certified, or was I not?

MR. CERNE: You were certified as an as-builder, not as an inspector. All the QC/QA inspectors at Seabrook were certified to ANSI N45.2.6 requirements. They had to be to conduct inspections.

MR. RICHARDSON: This is true. The

assumption I am making is that I was certified adequately to perform the work I was doing.

MR. CERNE: Which was not ANSI N45.2.6.

MR. RICHARDSON: According to the paperwork I have --

MR. TRACY: I would really like to deal with some of the substantive problems.

MR. DURR: Me too. But he keeps bringing the subject back to this.

MS. TRACY: And you keep worrying at it endlessly too, Jacque. It's a dialogue going on here.

MR. DURR: I understand that.

MR. CERNE: I don't understand what's going on when people are going back through our inspection reports. If you wanted to have an independent agency come and look at our inspection reports, yes, they'll find several problems. That's us doing our job, finding the problems and seeing that they are getting corrected.

Now, if somebody goes back to support ELP allegations and raises issues that have been identified, corrected, and put to bed in our

inspection reports, and rehashes them in support of some item that has no factual basis, it seems to be stretching.

MS. TRACY: I think that you are incorrect when you say they have no factual basis, Tony. I think that that's an assumption on your part.

MR. CERNE: The factual basis I'm talking about is what Jacque needs for us to verify that there are problems or aren't problems in the plant. You're telling us things we already know. That's not an allegation. You're reading from our report and telling us what? We didn't do our job properly? You want to go to the Office of Congressional Affairs?

MR. DURR: Time.

That's what I was trying to set clear at the opening of the meeting, and Mike thought that it was adversarial. But I was really trying to establish the protocol, the method, the procedure, parlimentary procedure, if you will, by which we have to bound this thing. Otherwise, we end up off the track all the time. That's why I said it was confined to 87-07 and 86-52 issues. That's why I

wanted to address the ones that we requested in the letter that we sent you, to please tell us up front what you wanted to discuss. So we would have the appropriate people here, and we would be prepared to intelligently discuss it.

MS. TRACY: Well, why don't we forge forward then, Jacque?

MR. DURR: I keep trying to, but Doug keeps wanting to go back to this other issue.

MR. RICHARDSON: I have a specific question. You've got quite a performance problem with Pullman.

MR. DURR: We don't dispute that.

MR. RICHARDSON: What was the appropriateness of deleting any inspection program whatsoever, when you've got as-builders catching that portion of mistakes?

MR. DURR: That's a question. That's not an allegation.

MR. RICHARDSON: I never said it was an allegation.

MR. DURR: Okay. And the question that you ask is, they deleted the B31.1 program. Is that correct? Is that what you want to know, why

they deleted that? All I'm telling you is, that from the NRC's perspective that's a non-safety related program. It had no impact on the safety of that plant, none whatsoever, or we wouldn't have let them do it. That is the answer to your question.

MR. RICHARDSON: Fine. I disagree with the answer. The reason I disgree is that the as-built programs have been catching a hell of a lot of mistakes, and when you have a piping contractor with that kind of conformance problem --

MR. DURR: You have to understand. What impact does it have on the safety of the plant, the nuclear safety of the plant? I'm not talking about occupational hazard. I'm talking about nuclear safety.

MR. RICHARDSON: As you noted, it's in everybody's best interest to insure that the non-nuclear portions of the plant are fully functional and fully capable in order to prevent having to use the safety systems.

MR. DURR: We agree.

MR. RICHARDSON: That's the reason on that particular section.

On the other one, if you've got a

problem with documenting and analyzing --

MR. DURR: You're burning up her time. She wants to go on. I'm prepared to move on. It's up to you how you want to spend the time.

MR. RICHARDSON: I would like to know if it appears inappropriate to be reducing inspection efforts on the part of the contractors --

MR. DURR: So noted that you made that statement. Moving on.

MR. RICHARDSON: Very well.

MR. DURR: Sharon, what would you like to talk about next?

MS. TRACY: I believe "I", the Dravo shop welds in the turbine building were detective and uncorrected.

Did you want to say something about that, Harold?

MR. GRAY: Yes. We have to draw back to another report. The 84-12 report on page 40 to about 43 discusses that question in depth, and leaves it as an unresolved item, pending them to radiograph the weld. This weld was not a radiographic quality weld to start with. The weld was later radiographed, found to have a small indication, which was not

related to the original allegation, which was not contained on the inside surface of the weld, which the allegation pointed to. This defect was repaired and re-radiographed, found acceptable, and it was cleared in a later report. So that "I" is not true.

MS. TRACY: How many welds were we dealing with there?

MR. GRAY: The alleger gave us a specific single weld that he saw was a problem.

MS. TRACY: So you only dealt with that one weld?

MR. GRAY: That's correct.

MS. TRACY: When he spoke to me about it he seemed to indicate that there were -- there is apparently a lot of Dravo piping, and he felt that the welds in general in that Dravo piping --

MR. GRAY: He didn't tell us that in 1984.

MS. TRACY: So you only looked at that one?

MR. GRAY: That's correct.

MR. DURR: He was interviewed directly in 1984.

MR. CERNE: When you say Dravo shop

welds in the turbine building, again, you're talking about non-safety related welds. Dravo, just like the piping contractor on site, built their piping to specific standards. The safety-related piping was build to ASME standards. The non-safety piping was built to B31.1 standards. The turbine building piping is all non-safety piping.

MR. RICHARDSON: Did Dravo also do safety piping?

MR. CERNE: Yes, but to different standards, including QA at the shop. The QA at the Dravo shop was only applied to the ASME piping, or -- yes, the ASME piping, not the B31.1 piping.

MR. RICHARDSON: There's no requirement for 100 percent radiographic inspection?

MR. CERNE: 100 percent radiographic inspection only takes place in ASME class 1 and 2 piping anyway. ASME class 3 only gets surface examination.

MS. TRACY: So this is ASME class 3?.

MR. RICHARDSON: No. B31.1.

MS. TRACY: It's even lower than class 3.

MR. CERNE: No QA was applied. It

wasn't required because, as Jacque pointed out, there is no safety consequence to the weld blowing away, for example.

MS. TRACY: I find it odd that when I spoke with this person, he mentioned pleural welds, and that there was only one that he mentioned to you and that you dealt with. I would kind of like to check back on that with him.

MR. DURR: It's interesting to note that this is an allegation that we already looked at. We already knew about this. We already inspected this one before back in 1984 when he made his original concern known to us.

MS. TRACY: You might find it interesting, Jacque, I don't know. I just know what people come to me with, and he said that he was not really satisfied with how it had been dealt with. He spoke with him with April too.

Okay J -- or was there more you wanted to say?

MR. GRAY: Excuse me. I did explain to him that in April.

MS. TRACY: Did you?

MR. GRAY: Yes.

MS. TRACY: Was that on the record?

MR. GRAY: I think it was on the record.

MS. TRACY: I think that you all were speaking to each other off the record after the meeting.

MR. DURR: J. What's the question? This is, as Mike's characterized earlier, an umbrella allegation.

MS. TRACY: Yes, it certainly is.

MR. DURR: The welds were bad, but we don't have any specifics. To counter that, we have physically gone out and done independent radiography, using our own equipment, our own technicians, our own sources. We have independently done our own radiographs, and done magnetic particle liquid penetrant tests, and we have not found any welds that required repair.

MS. GENTLEMAN: Regarding the Padavano lines, maybe you can straighten me out on this issue. The NRC did a sample of his welds; is that correct?

MR. DURR: I cannot address that. Maybe you can. I can't.

MS. GENTLEMAN: About 136 welds.

MR. CERNE: There were a total approximately of -- I'm going approximately from memory. This is documented, not only in our follow-up inspection reports, but also by an Office of Investigation report which looked into the wrongdoing aspects of the issue, the qualifications aspects. There were about 2400 welds in question, not that he had falsified 2400 welds.

What the licensee did was, because even one of his welds was in question, they said that the integrity of this individual cannot be counted on. We're going to look at every single weld that this individual did a surface examination on. They're not radiographed welds. They were just surface examinations which cut it down to a lower class of piping.

Out of the 2400 only 800 approximately were safety related. The licensee said despite that fact, we'll go back and try to redo the examination on all 2400. Some of them were inaccessible. By inaccessible, it's almost like a misnomer because when you get into a weld, you may have to do a repair in process, and then build the

weld back out, and now the PT surface examination that was done is inaccessible. But if that weld got radiographed anyway, for example, a class 2 line, then you're looking at the volumetric section of the weld anyway.

MS. GENTLEMAN: Isn't inaccessibility also occurring where a weld is encased in concrete and not accessible for that reason?

MR. CERNE: Yes, but I can think of very few welds that were encased in concrete. Some were buried underground, but it's not standard practice to encase piping welds in concrete. I can't even think of any, off the top of my head. Because the important ones have to be accessible for ongoing evaluation throughout the life of the plant.

MR. RICHARDSON: I have a question on that. Between unit 1 and unit 2 approximately in the area between the containment and unit 1 PAB diesel generator building there was a trenched-out area running north/south on the site that had a rack of what appeared to be about 8 or 10-inch stainless pipe maybe 4 or 6 wide, 3 or 4 deep, and I believe that was encased in concrete.

MR. CERNE: You're talking about cable

conduit. It's not stainless. It's galvanized steel cable conduit. That's encased in concrete.

MS. TRACY: Go on about Padavano.

MS. GENTLEMAN: My final question would be -- maybe you can direct me to a document that would be helpful. Of the 136 welds or thereabouts that the NRC took a look at itself, my understanding is that none of those welds are the welds that Mr. Padavano actually pleaded to. Is that correct?

MR. CERNE: No.

MS. GENTLEMAN: All of the welds that he pleaded were inspected by the NRC?

MR. CERNE: No. There is a cross there. When the licensee reported this problem and said this is what we're going to do about it, they lauched into correction action which is to inspect their welds, or as many of the 2400 as they could get to.

The ones they couldn't get to, they had to disposition either by engineering evaluation or some other technique. A lot of the ones that were non-safety related, if they weren't accessible, they just said they're non-safety related, they're crane

hooks or something that's not part of the permanent plant.

The safety related ones, we -- and I can refer you to the inspection reports -- we looked over their shoulder in this entire process and watched them do their corrective action. Then we came back with our van and did independent inspection on some of the welds that they had redone and said was no problem.

In other words, not all of the ones that Padavano did were faulty. Some were ones they said -- and one percent sticks in my mind. Maybe one percent of the ones had to be redone. We did a sample on the ones that had to be redone to assure that the final weld was a proper repairing process.

In the ones they dispositioned to say that we don't have to do anything with it, we did a sample of those. So we took a sample and our sample -- 136, if you got that out of some report, I'll believe you. I don't remember the exact number. We took a sample, like we do in all our inspections, on any category where the licensee made some rationale decision as to why they did it the way they were doing it. We judged that decision as it was being

made, and then we brought our van in and did a sampling to assure ourselves that it was a good decision. All of that is documented.

MS. GENTLEMAN: Within those samples did you test the welds that he pleaded to?

MR. CERNE: Yes. That was part of the sampling.

MS. GENTLEMAN: The specific welds that he pleaded to.

MR. CERNE: Pleaded to? All of the 2400 we sampled --

MR. RUSCITTO: Are you talking about a legal -- where he admitted under oath --

MS. GENTLEMAN: Yes.

MR. RUSCITTO: I'm not sure we know what those welds are. We made no distinction as to the ones he admitted to. We looked at every weld he ever did, whether he admitted to falsifying it or not.

MS. GENTLEMAN: The welds that he pleaded to in court that he had falsified, you are not sure if you re-inspected those or not?

MR. CERNE: We don't know of any --

MS. GENTLEMAN: You may have, if you

caught them in the sample, but then again, you may not have?

MR. DURR: That's correct. I think that's true.

MR. CERNE: I don't understand the tie between what you're leading to --

MR. DURR: Let's break it up into a set theory here. There's 2400 in the set.

MS. GENTLEMAN: There's 2400 in the set, but there's a sub-set of welds that an inspector indicated --

MR. DURR: Under oath that he --

MS. GENTLEMAN: Under oath.

MR. DURR: That he didn't inspect them; that he had falsified.

MS. GENTLEMAN: My simple question is, did you check them.

MR. DURR: Specifically did we look for those welds? I think the answer is no. We took sub-sets of 2400 and did some of each sub-set, the ones that they said were okay, the ones that they said were done by Padavano, and the ones that they said that they didn't have to do. We looked at sub-sets of all of those or a sampling of each one of

those. We didn't take a slice and say these are the ones that Padavano said were bad, and we'll go look at those again. We looked at the whole population. We didn't want to focus in. We wanted to make sure the whole set was good.

MR. CERNE: When you say he pleaded to 11, I don't think that the legal part of that where the Department of Justice got involved and is pleading to certain contentions, it was maybe a generic pleading to 11. I will admit I did it 11 times. But there wasn't in that process, here's weld 54-X75.

MS. GENTLEMAN: Oh, yes, there was.

MS. TRACY: Yes. It was very specific.

MR. DURR: Aside from that, the responsibility to go back and correct it was the licensee's. What we went back and looked at was his program to make sure that everything was okay. We looked at the programmatic aspect of it, and we sampled the sub-sets.

MS. GENTLEMAN: I understand, as best I can, your sample approach. My question is more, a simple citizen in the world knows that a quality

control inspector identified welds whose documents he falsified, and my question is simply, have you looked at those. I guess your answer is that maybe you did, and maybe you didn't.

MR. KAUCHER: All the welds were looked at, but not specifically by the NRC.

MR. DURR: The NRC did not specifically look at the 11 or however many it was, unless they were in that sub-set that we looked at.

MR. CERNE: But the licensee's look at it is no different than the program they used to look at all welds. In other words, when they re-looked at the weld, it was no different than any other weld we may have picked as a sample for other reasons.

MS. GENTLEMAN: Thank you.

MR. RUSCITTO: The fact that he falsified the records on the weld doesn't mean that it was an improper weld. It just means that there was no assurance.

MS. GENTLEMAN: What percentage of the 800 safety related welds that the licensee looked at failed? Can you direct me to a document with that number?

MR. CERNE: I think the failure rate

is documented, and I want to say in the neighborhood of one percent. Failed in the sense that a repair had to be done to the weld. In other words, the examination process yielded something that said something needed to be corrected.

MR. RICHARDSON: I have a question for you. One of your earlier CAT reports gets into an area on weld examination that was done. It cites a sample of 29 welds that were radiographed, and of those, I believe 6 of them came up with reportable deficiencies. My understanding was that these had passed Pullman's QA. Is this a common occurrence?

MR. DURR: What do you mean common? Relative to what? Other nuclear power plants?

MR. RICHARDSON: No.

Do you have a significant portion of your inspections where you go back and x-ray welds that have already been bought off by QA? Do you have any significant amount of cases where you find deficiencies weren't identified by the contractor?

MR. CERNE: The 29 you're talking about was not an NRC identified case for Pullman welds. The licensee shows above the code requirements to review all radiographs on the site, either done by

Dravo or Pullman or done by anybody, and in the process of doing that review in some cases they identified some problems.

Now, not in all cases -- 29 might be a number you have documented, and I'll believe you if you say you read it. Not in all cases are we talking about problems where the weld was bad. It may have been a problem with the radiograph. In some cases it required re-shooting of the radiograph. In other cases it could be dispositioned by a code interpretation or other engineering evaluations.

MR. DURR: Do you have an example? No. Don't dig it out now. After the meeting bring it to me, and I will take a look at it because the NDE van comes under my branch, and I can probably tell you what the answer is, if I see it.

MR. RICHARDSON: I believe it --

MR. DURR: But in an effort to speed things along, so that Sharon can get her salient points covered, see me after the meeting, and I will discuss it with you.

MS. TRACY: It seems, given the restrictions on dealing with things that are too general, that we've perhaps covered the major points

I wanted to address in the quality assurance/quality control section, since I would imagine that Q, welds were improperly certified and quality assurance was poor according to a third QA engineer, would be too general for you to deal with. And also, there was a lack of weld safety, and people were harassed, if they raised safety problems. Am I correct?

MR. DURR: Sorry? They're too broad?

MS. TRACY: For you, yes.

MR. DURR: I don't think they're too broad. I think we addressed all these things in 86-52.

MS. TRACY: Let's go on to 3, the document control section. The problem with pipe and pipe supports being assembled using the wrong materials after the identification numbers were ground out and rescribed, that was something that was brought up in some of the statements that I gave you in April, and it was not really addressed in your 87-07 report. We feel that this also points to a problem with controlled documentation.

MR. DURR: I don't understand how that has anything to do with document control.

MS. TRACY: This is the way I imagine

it works, Jacque. You have your design, and your design has the equipment laid out with the numbers for the different pieces that belong in various locations, and if the incorrect equipment is used, then your documents do not reflect the real situation. In other words, the numbers on the equipment might appear to match the documents --

MR. DURR: I understand where you're coming from.

MS. TRACY: -- but they don't because they been ground out and rescribed.

MR. DURR: But the root cause is not a document control problem. The root cause in this particular case is a material control problem.

MS. TRACY: Okay. Let's call it a material control problem.

MR. DURR: And that ultimately results possibly in document control -- not document control, but inaccuracies in the documentation.

But to me a document control problem is one wherein the formal document control system, and there is such an entity that controls procedures, drawings and specifications and those things to make sure that the appropriate document is at the right

place in the right revision, that's the document control system. So when you say this is a document control problem, from my perspective it's a material control problem. It ultimately results in inaccuracies in the documentation, but that's not a "document control problem".

MS. TRACY: But it is a problem.

MR. DURR: I understand where you're coming from, yes.

MS. TRACY: It wasn't really addressed in 87-07 either.

MR. DURR: What about 86-52?

MS. TRACY: No. It wasn't even raised in 86-52.

MR. DURR: When did you give us this?

MS. TRACY: I gave this to you in April.

MR. DURR: Is this one of the issues that we sent you a letter and said these are kind of general, and we need some more information? There were some of those things that you gave us in April, and we said yeah, we can do something with these because they're specific enough. And then I sent you a letter and said that on these, I've got some

questions for you.

MS. TRACY: Right, and I answered some of those questions, and some of them I didn't.

MR. DURR: Those we have not done anything with, to my knowledge. If it was not in 87-07 or 86-52, we haven't done anything with it. Those were awaiting responses from ELP, and those will be turned over the residents, I think, and that will be addressed in a subsequent inspection report. Yes, there's some of these things that we didn't talk about in 87-07, and that's why we sent you a letter. We felt that we really couldn't do anything with them at that particular time.

MS. TRACY: Again we're caught in this 'Catch 22' situation where the person who made this allegation does not have access to the documents he needs in order to be specific enough for you to act on the exact equipment. If he were to wander through the plant in the locations where he was working, he would be able to point the equipment out to you, if he had access to the documents.

MR. BUSCITTO: But even so, I am not sure we understand the statement of the problem. What was wrong with what they did? If equipment was

changed under a proper design control procedure, then maybe what he saw wasn't even a problem.

MS. TRACY: It was not that way. The way it was explained to me was, this crew was working on some pipes in the turbine building. They needed a piece of pipe. They went out to the yard to find the pipe. They were looking for a specific number. They could not find it. They found another pipe that approximated what they needed. They cut it off to the size that they needed. They ground out the number that was on it, and scribed in the number that they were looking for, with no documentation.

MR. DURR: In the turbine building?

MS. TRACY: No.

MR. DURR: That may not be safety related piping.

MS. TRACY: I think I'm wrong about that. I can dig out exactly where he was working.

MR. RUSCITTO: What you are describing is not necessarily wrong.

MR. CERNE: We need more details.

MR. DURR: We can't decide that now.

MS. TRACY: I think that I should maybe need to talk to you to find out exactly what

more details you need in order for me to get information.

MR. CERNE: I think Jacque asked the questions. We can go on from that basis.

MR. DURR: That may be in those questions. Let us take a look at that.

MS. TRACY: You'll check back on that.

MR. DURR: We'll be in touch with you.

MS. TRACY: I'm curious that you say it might not necessarily be a problem. I would assume --

MR. RUSCITTO: As long as there's traceability of the switch or the re-tag. If it's an equivalent substitution, it's a perfectly valid change that occurs all the time. As a matter of fact, that's what we would want them to do, would be to re-number the part to what the design shows.

MS. DURR: There's a couple of numbers that you have to be concerned with. Some are system identification numbers, pipeline numbers, but the number from the material document control that you're concerned about is the heat numbers. If they change the heat number, now they've changed the identification of the kind of material and its

allowable stresses and those kinds of things. If it's ASME stuff, it has a code data tag on it. That code data tag has to remain intact. If the code data tag isn't on there, they can't put the piece of pipe in the system.

MR. CERNE: If it was safety related piping, that's one of the QC inspection points they would be looking for.

MS. TRACY: The tag.

MR. DURR: They look for those tags. Those are unique tags. If you take one of those tags off, you either have to save the tag, or you have to take a stencil of it or something. Those have to all be accounted for. So if it was ASME code piping, that kind of a scenario is pretty hard to envision without controls on it because even if you put it in, you can't verify what it is after it's in there, and they're going to make you take it back out again.

MR. RUSCITTO: But if they are just changing line numbers, it's just like changing the license plate on your car versus changing the serial number on the engine block. You can change the license plate on the car, but you can't falsify what engine is put in there.

MS. TRACY: I understand the distinction. I'm glad you explained that. Also, this explanation will make it easier for me to get more details that would be relevant to your dealing with the problem.

MR. RICHARDSON: I would like to ask a question about something that I hadn't thought of until recently. One of the emergency feedwater lines -- this is in the area of the emergency feedwater pump house -- was supposed to make a 90-degree bend with, I believe, a weldalet attached to the bend. When I did as-builts on the line, the stamped identification on the fitting was ground out. The whole fitting was ground, as a matter of fact, and the identification was scribed into the piece by hand.

The reason I'm concerned about it is that a weldalet or an elbowlet, I believe, according to the catalog cuts I've got, is supposed to have the particular break through its taper in order to give you the concentrated internal pipe, the thicker section at a particular point in the internal wall. This one didn't have that configuration. It was a straight taper all the way out. Have we got a piece

that shouldn't be there? Is that an improper piece to be in that location if the weldalet was called for?

MR. DURR: That's a question.

MR. RICHARDSON: I can give you a more specific location. It's a general question now.

MR. DURR: It's hard for us to answer that question without going out and doing some inspection on it.

MR. RICHARDSON: The reason I'm concerned is because the outside contour of the piece doesn't appear to match the product catalog that I've got. The entire surface is ground, and the identifying information is hand-scribed in.

MR. DURR: My question is, is this an allegation? Are you alleging that there is a bad piece in that line out there, or are you just concerned and have a question? If it's an allegation, we will go out and do inspections and make sure that's not true. Do you have first-hand information that that's a concern? If you are just asking a question, if this is a question, we will not be able to respond to you.

MR. RICHARDSON: I can tell you first

hand that the contour of that particular fitting doesn't match the catalog cuts that we were issued at the time, and that the information on it is hand-scribed, as opposed to the factory stamping that could be expected to be there.

MR. DURR: You never answered my question.

MS. TRACY: It's an allegation, Jacque.

MR. DURR: We will treat that as an allegation, and we will do something with it.

MS. TRACY: Thank you. Very good.

MR. RUSCITTO: But we need more information.

MR. DURR: But we need to know exactly where this alleged piece of pipe is.

MR. RICHARDSON: The emergency feedwater pump house on the floor that would be at approximately elevation -- what, 25 feet, 28 feet?

MR. RUSCITTO: Yes.

MR. RICHARDSON: That approximate range. A few steps up from ground level.

MR. DURR: And it's on an elbow?

MR. RICHARDSON: It's on an elbow

where the pipe --

MR. RUSCITTO: Do you know what size pipe?

MR. RICHARDSON: I believe it's 8 or 10 inch.

MR. RUSCITTO: Do you know if it's suction piping in the emergency feedwater pump?

MR. RICHARDSON: Yes, I believe it is. There are 2 lines directly over each other that come through from the yard, go through the stairwell, and pass through the east wall of the emergency feedwater pump house, go north along the inside of the east wall, and then go west along the inside of the north wall, and then the 2 of them go south in different directions to go to the pumps.

MR. RUSCITTO: Okay.

MR. RICHARDSON: And it is on the elbow on one of those lines -- I don't know which -- where it comes off the wall and goes south to the pump.

MR. RUSCITTO: Okay. That's good and specific.

What size is the tap?

MR. RICHARDSON: I'm not sure. I

guess a 1 to possibly 2-inch range.

MR. RUSCITTO: We'll take a look at it, but just to tell you off the cuff, that piping probably isn't even there anymore because that whole line was re-designed after -- for totally unrelated reasons, for testing during the start of the test program. EFW research lines were totally changed. So based on what you're telling me, I think we're going to find that that's not even there anymore. But we will take a look at it. That's certainly easy enough to do.

MR. DURR: Next?

MS. TRACY: Still under document control, the fact that blueprints were not updated, workers in the document control department were untrained, did not know how to read blueprints, and put incorrect numbers on blueprints. There is some documentation of these problems in your own reports, but this information came from someone who worked in the blueprint room.

MR. DURR: This was looked at in 86-52. I'm almost certain of that. Am I not correct?

MS. TRACY: It might have been a

slightly different issue.

MR. DURR: It sounds familiar.

MS. TRACY: I brought this to you in April, and 86-52 was done prior to April.

MR. RICHARDSON: I had discussed document control in 86-52, but this --

MS. TRACY: This is from a different person, put it that way, someone who worked with blueprints. And it has not been dealt with specifically, although I did give you this information in April.

MR. CERNE: Was this related to piping?

MS. TRACY: I would say that this is related --

MR. DURR: This falls under the same general heading as tracking of blueprints is an impossibility, and drawing revision control was ineffective. The alleger was doing as-built inspection on the fire protection system.

Is this the one that you made?

MR. RICHARDSON: Not entirely. Drawing revision control was ineffective is me. Tracking of blueprints an impossibility isn't.

MR. DURR: But this one we're talking about here, blueprints were not updated, and workers in the document control department were untrained, is that your allegation?

MS. TRACY: No, it's not.

MR. RICHARDSON: I think what you've done is combined 2 of them.

MR. DURR: We did. They all say the same thing.

MR. RICHARDSON: That's not all mine.

MR. DURR: I understand. All I am saying is, these are all similar issues.

MS. TRACY: They are similar, but this particular issue that we're looking at, letter C, was in a statement that was submitted to you in April.

MR. DURR: I understand, but how is that different from what we looked at in number 32 and 57, those allegations?

MS. TRACY: I'm looking at the exact affidavit right now because I think --

MR. DURR: It sounds like the same thing.

MR. RICHARDSON: What was the allegation number in 86-52?

MR. DURR: 32.

MS. TRACY: This was Perrini, the document control department of Perrini, and in the permanent materials department keeping track of materials. Whoever it was that asked if this had to do with piping, I don't know if that answers your question.

MR. DURR: I think if we had that same allegation when we did 86-52, it would have gone under 32 and 57 where we went back and looked at drawing control.

MS. TRACY: In the document control department. So this was for Perrini, and the document control department person in charge was so and so. He was fired after an investigation.

MR. DURR: Because to support those other 2 allegations we essentially recounted all the inspections that we've done of document control, the fact, we've done as-builts using independent as-built inspections of equipment, and the fact that we have also done drawing revision control inspections. And in those cases we didn't find any significant breakdowns in the document control process. I don't know what else you can do with that.

MS. TRACY: I don't know either, Jacque. I think that we have a disagreement of opinion here.

MR. DURR: What's that?

MS. TRACY: I think that there are quite a number of people who said that there were problems in that area, and you are looking at it from a different perspective than they were.

MR. DURR: That's correct.

MS. TRACY: And, therefore, reached different conclusions.

MR. DURR: Here again, it goes back to what's there today. Does that plant meet the design drawings? And everytime we go out and inspect it, we find that it does meet the design drawings. Everytime we look in a specific area we find that it meets what it's supposed to meet. That's the bottom line.

If these things occurred, and here again, it's speculation whether they did or they didn't, it's hearsay, it's their word against the system. All I'm saying is that we can't find any instances where this resulted in hardware deficiencies in the field. That's what we are

interested in.

MR. RUSCITTO: Also, all drawings are not either safety related -- not all drawings have the same controls put on them, or some drawings are updated, and some are not, depending on what their purpose is. Lacking some more specifics on which -- even the catagory of drawings, we might be able to do something more with it. To say safety related piping instrumentation drawings, yes, but vender fabrication drawings may not even be part of the official design process, although the drawings were available on site and were used for a certain period of time.

MR. CERNE: Particularly in the area of civil structural, the process of issuing an engineering change authorization, which is a document which changes the design, not in all cases there was an explicit decision made on the ECA as to whether the affected drawing had to be changed or not. When it didn't have to be changed, then that ECA would become part of the design for that what you call blueprint. We call it design drawing. So if you just looked at the design drawing, you wouldn't get a complete picture of what it's supposed to look like out in the plant. You would have to pull out all the

ECA's that went along with it. That process of keeping track of those ECA's was done on a computer controlled system which has been inspectioned many times by the NRC.

MS. TRACY: D and E sort of reflect the same kind of problem which is the destruction or theft of documents and blueprints and so forth.

MR. DURR: That D is blueprints were destroyed in the blueprint room. I believe that. Obsolete revisions should have been destroyed in the blueprint room. Are they alleging that good drawings were destroyed in the blueprint room, ones that were supposed to go to the field that never got there? Is that what they're alleging? All I have here is that they destroyed blueprints. That's like they destroyed money at the mint. Yes, they do.

MS. TRACY: The specific allegation was that the people who were working in the blueprint room were getting rather high on controlled substances, and when blueprints came in that they were supposed to make revisions on, occasionally they would say forget it and throw them in the shredder, if that's what it is you have.

MR. DURR: That is a possibility.

That may be true or untrue. I don't know. What we do know is that there are checks and balances for that kind of thing. There have been instances at other nuclear power plants where people have been found -- they were supposed to be delivering blueprints and were trashing them in the trash can instead. That always gets found because QA does audits of those things to make sure that the stick files are kept up to date, and that the people have the appropriate drawings in the field. So any one individual trying to -- it's like the mailman that doesn't deliver the mail. Sooner or later they find out.

MS. TRACY: It might take 40 years, but --

MR. DURR: It doesn't take 40 years in a nuclear power plant because we're a lot faster than that. We have found those cases, but there's checks and balances that compensate for that.

MS. TRACY: The next item, E, is that there was massive destruction and theft of documents during the 1984 reduction in force according to a former United Engineers and Constructors manager. I put that in here, although you did, I admit, deal

with this in report 86-52, simply because it substantiated our contention that document control is ample as a problem.

MR. GREENSTEIN: Was that a significant incident? There was destruction of documents; is that correct?

MR. DURR: I don't remember the details on that. I didn't do that one.

MR. CERNE: No. There was a massive -- in 1984 when they shut down for a period of time, there was a massive layoff. We didn't have any evidence of massive destruction and theft of documents. If people got laid off and they cleaned out their desks, there should not have been any drawings that were other than informational drawings because the controlled stick files and the official drawings were all kept in locked cabinets and locked rooms and so forth.

MR. GREENSTEIN: You can't agree with that statement?

MR. CERNE: I can agree that probably several documents were taken off site and destroyed. We didn't have any evidence that while they were going through this process that there was any formal

design or records or documents that were stolen or destroyed. The licensee would have had to report that.

MR. GREENSTEIN: You believe that you have a complete blueprint record then; is that correct?

MR. RUSCITTO: We don't have any indication that the official design drawings are deficient in quantity or accuracy at this point.

MR. DURR: What, I guess, needs to be pointed out here, and I don't know what the statistics are, periodically we get allegations that are fruitful, that lead us right to the source and they are just exactly as characterized. And those are easy and we can deal with those and correct it very quickly.

But a lot of these allegations are like myths. There is enough substance to them. Somebody did see something, but they saw it out of context, or it's been taken out of context, and when we go to investigate, we found that, yes -- a good example is an individual saw a pump that was deficient down in one of the lower levels of the plant. When I went to look at it, yes, the pump was

deficient. Yes, the licensee had identified it. Yes, there was a design change in process. Yes, the engineer knew all about and was just ready to discuss it with me. So there was some substance to what the individual had, but he had it out of context. He saw the front part of it, but he never saw the fix. That's what a lot of these turn out to be. They saw the problem, but they never saw the fix. They left or were moved somewhere else and they only saw that little piece of the picture.

MS. TRACY: But, Jacque, I have an obligation to bring to you many of these issues.

MR. DURR: We appreciate it.

MS. TRACY: I have no way of checking myself to see how valid they are, and I have an obligation to bring them to you.

MR. DURR: We expect you to bring them to us.

MS. TRACY: This is life.

MR. DURR: Have we ever discouraged you from bringing us these allegations?

MS. TRACY: No, but you do occasionally make little comments about how --

MR. DURR: Only because --

MS. TRACY: We don't know anything --

MR. DURR: No. What I'm trying to point out to you, it's like going to the doctor and he said take 2 of these, and you go home and say I'm not going to take any of them. You don't take the advise once we give it. You bring us the allegation. We go out and do the best job that is possible, and then when we bring them back here, you are not comfortable or you feel uncomfortable and dissatisfied. That's the disconnect that I'm trying to correct. When you bring these to the doctor and he looks at them and says this is okay, then somewhere you have to believe the doctor.

MS. TRACY: Well, maybe some day I will, Jacque.

MR. DURR: Good.

MR. GRAY: Could I add to this E here?

MR. DURR: Sure.

MR. GRAY: I was on the CAT team inspection that occurred shortly after the big layoff. There were approximately 10 or 12 people in the CAT team. No one came back with an issue that documents were missing. There were items that they

were inspecting during the course of that inspection. That was a 4-week inspection. I spent a fair amount of time looking at the ECA's, RFI's and drawings, and did not find a single case of a missing document, ECA or drawing.

MR. DURR: The 2-week CAT in '82, when I was up there with a construction team, and Jane Grant was on that, she spent 2 weeks, the woman engineer spent 2 weeks looking at the document control system and she came up with 1 or 2 violations, but they were minor things, very minor, not to indicate that the entire system was breaking down, but isolated cases that were obvious that they needed to get the latest documents reviewed. There was nothing to indicate that the whole system was coming unraveled.

MR. RUSCITTO: We use this document control system and the change document tracking system. We've been using it for years and years and years, and we never have a problem coming up with a drawing. It's not like there's one master drawing that gets lost. Drawings can be lost and originals can be destroyed, but there is always a copy where you can go back and reproduce it and replace it.

There are controlled drawings which have to be updated by the document control system, and there are also drawings called information only. Anyone who needs one goes into the document tracking system, pulls the drawing out. It gets stamped information only, meaning it's current for the time that you got it, but if someone makes a design change next week, they're not going to track you down and update your drawing. When you're done with whatever you were doing, you might throw the drawing away. That could be construed as disposing of drawings or whatever.

There's an awful lot of documents floating around, and it's really in the licensee's best interest to make sure that information-only drawings have a very short life, and people aren't using them when they should be using controlled drawings. And as a result information-only drawings are supposed to be trashed as soon as you're done with them.

MS. TRACY: I believe that this allegation revolved around the time when Pullman-Higgins was leaving the site and there were apparently some fairly bitter feelings on the part of

some of the people who were leaving, at least this was the impression that I was given by the person -- or the people who told me this. So it seemed that almost just revenge or something like that that there were documents being destroyed. But you all seemed to have had the documents that you needed to have access to subsequent to that.

MR. CERNE: Particularly in the Pullman-Higgins. That's why I asked if it was piping because the piping was as-built and stress reconciled. So any errors that would have been in the plant as a result of some drawing control problems would have evidenced themselves during the as-built process, particularly with piping. There were controls in the other disciplines, but particularly in piping it would be very hard to have a mistake get all the way through the system.

MR. DURR: And source design documents, I mean the "original" design documents, those are not in the field available to any one individual to destroy. Those are back in the corporate office someplace. So anything, other than those kind of documents, most of that stuff is replaceable.

MR. GREENSTEIN: You can't recall a single instance of where you went looking for a document and it could not be found?

MR. CERNE: No. There have been cases of document control errors. We've written them up on violations. We're talking about 26,000 inspection hours over the course of this plant.

Using your term again, there has not been anything endemic. And if you tie it specifically to the layoff in '84, this CAT team that Harold participated on, which was consultants and people from Washington, spent time there right after the layoff. It was like April, May --

MR. GRAY: We started there the week after the layoff, and then it extended. It was a 2-week inspection, followed by a week back in the office, followed by 2 more weeks at the site. We were there almost 2 months.

MR. CERNE: I think Harold was looking at design control.

MR. GRAY: I was design control and ECA and RFI review.

MR. CERNE: That's the best time you could have investigated this question. We weren't

doing it for that reason. He was doing the normal CAT inspection function.

MR. GREENSTEIN: There was nothing missing?

MR. GRAY: No. That area was still staffed with a few people.

MS. GENTLEMAN: Just for the record though, statements have been made several times, and just now by you, that the as-built process and so forth would have uncovered any underlying discrepancies in the drawings. It's my understanding from having read the NRC's inspection report regarding Skylar Mitchell's allegations on as-built drawings that were, in fact, descrepancies, although not in your view significant descrepancies between the way the plant looks and the way drawings looked.

MR. CERNE: When you talk about descrepancies, all systems that are as-built have criteria within which you build it. Some are acceptable.

MS. GENTLEMAN: I understand that --

MR. CERNE: When I say descrepancy, I say beyond the criteria that was -- the Skylar Mitchell allegations were investigated and closed.

One of the gentlemen that worked on that is in this room right now. None of the descrepancies were beyond the design tolerance, and that doesn't make a descrepancy. That's the point. None of the issues he raised were descrepancies because they were within design tolerances placing the pipe in that particular location.

MR. MANOLY: There wasn't a whole lot in the Skylar Mitchell allegation as far as getting anywhere close to a design difference. It was a trivial dimensional difference within the tolerance.

MR. DURR: You look perplexed.

MS. GENTLEMAN: I am not perplexed. I don't want to debate the Skylar Mitchell issues today.

MR. CERNE: They are closed.

MR. DURR: But the point being, and I guess something that the world needs to understand, and probably does, but subconsciously, and that is, there are no absolutes. That is to say that when we put 10 feet 6 inches on a drawing, it's physically impossible to make the piece 10 feet 6 inches exactly. It's 10 feet 6 inches, plus or minus something. The plus or minus something is what

they're talking about. In the design specifications the plus or minuses, recognizing that there are no absolutes, the plus or minuses cover the descrepancies or the differences that you'll find between what's in the plant and what the specification called for. It falls within that plus or minus value. Skylar Mitchell's problem ----

MS. GENTLEMAN: I'm talking about the difference between the drawing and the plant, not between the plant and the spec.

MR. DURR: But the drawing is part of that. The drawing is the thing that models all of that. And recognizing that even when you put it on the drawing, 10 feet 6 inches exactly, it may come out 10 feet 6 inches and 1/2, or 10 feet 6 inches and 3/4 or more or less. The specification, the design, recognizes there are no absolutes. So it sets tolerances within which they can live because the ultimate goal is to make sure that when they install that piping it fits the structural design analysis.

MS. GENTLEMAN: I am understanding that the design has tolerances attached to it. I'm just talking about the difference between as-built drawing measurements and the physical measurements.

MR. MANOLY: You might be correct.

MS. GENTLEMAN: I'm not debating whether or not those are beyond or not beyond tolerances. All I am picking up is, on the fact issue, that some of the drawings are not as precise as you are alleging they are. Your own inspection report pointed out --

MR. MANOLY: I believe there were 4 measurements in the report that we said that did not agree with what was shown in the drawing. However, those numbers were all within the accepted tolerances.

MS. GENTLEMAN: Fine. That's not the issue. The first point is a simple issue that I'm raising now.

I would also note that Skylar Mitchell's work was based on 300 feet of pipe, and to find 4 on 300 feet of pipe --

MR. MANOLY: No. The 4 that we are talking about here were based on samples I did and was not Skylar's. It was part of Skylar's other stuff. When I did my inspection, I looked at Skylar's and other things. I went through the other things that were not brought up so I could get a good sample

of what the drawings looked like. The 4 I found were really trivial numbers that you can't even get excited about. It was ridiculous.

MR. RUSCITTO: Isn't it correct that there is also a tolerance in measurement on as-builts --

MR. MANOLY: Yes.

MR. RUSCITTO: It's correct to say that an as-built drawing correctly reflects the plant, even though there may be a descrepancy between what is measured in the plant and what is given on the drawing, if what is measured in the plant is within the tolerance accepted to the as-built standards. So you can have a drawing that is as-built as 6 and 3/4 inches, and if you go out and measure it in the plant and it's 6 and 1/2 inches, if that is within the accepted as-building tolerance, that is not considered a descrepancy.

MR. DURR: They won't change the drawing.

MR. RUSCITTO: It's not worth changing the drawing for 1/4 of an inch because the standard says that when you as-build, you know you're going to be within -- I'm just using a rough number -- plus or

minus a half an inch.

MS. GENTLEMAN: It depends on what you measure.

MR. MANOLY: There is tolerance on measurement of drawings that's accepted for installation. That's much larger. The new guidelines coming out would be that even if the deviations exceed the measurement, but are within the accepted tolerance, the drawing does not have to reflect that.

MS. GENTLEMAN: Good.

MR. MANOLY: Because they are meaningless. They don't serve any purpose. They just waste time.

MR. CERNE: The bottom line is, is the plant built well in accordance with design.

MS. GENTLEMAN: I think that's everyone's bottom line.

MR. DURR: Did that answer your question?

MS. GENTLEMAN: Yes.

MR. DURR: Anything else?

MS. TRACY: Yes.

MR. DURR: Go ahead.

MS. TRACY: I would like to leap ahead to page 3 here, under additional issues. Two issues raised since April, 1987, number 1, a crack in the core barrel, and number 2, falsification by a vender of certification required from the manufacturer.

I was wondering what kind of progress has been made on these 2 issues. It seems to me that an 18-inch crack in the core barrel would be something you would leap on with all 4 feet, and I was wondering if you had come to any conclusions with that one yet.

MR. DURR: This is not part of the 87-07, is it, or 86-52?

MS. TRACY: It is written into 87-07 in response to the letter that I wrote to you, yes. It is contained in the material.

MR. DURR: No. I'm saying we didn't inspect this during 87-07; is that correct?

MR. RICHARDSON: That's correct. It was brought to the NRC's attention after that inspection.

MS. TRACY: And it is included in the response that I sent you. So it is within the purview of this.

MR. DURR: I understand, but it's not part of 87-07. We have never gone out and done a formal inspection on that.

MS. TRACY: You haven't?

MR. CERNE: We've done some inspection on that.

MR. DURR: We've done something on that. There's been something done on it, but it was not part of 87-07.

MS. TRACY: We've been communicating about it since June. So I figured that you all must have done something.

MR. CERNE: I did.

MR. DURR: We talked to the guy, didn't we?

MR. RUSCITTO: Yes.

MR. DURR: The supervisor that was on site that went out with the guy was still on site when we were up there, and you talked to him.

MR. RUSCITTO: As soon as we got the allegation I went to the supervisor that he brought out with him to look at the crack on the core barrel, and we discussed the issue. And basically from the NRC's point of view there was no crack. I am not

saying that only based on this discussion because I personally inspected the core barrel when it was being installed, and there was no crack in the core barrel as described.

The way the supervisor described it as a shimmer, which on polished low alloy steels you get reflections of light, that it could have been miscontrued. But when you went out with the alleger, the alleger was unable to point and identify anything other than a glimmer of light on the piece of metal. The alleger at that time walked away satisfied that there was no problem. Now, he came back to you later on indicating that he still wasn't satisfied.

MS. TRACY: He came back to the utility later on.

MR. CERNE: There was a third inspection. He went to the EAR program as he was leaving the site, and besides Dave's inspection, besides the inspection done by the particular supervisor of the individual, an EAR individual went out with the gentleman again looking for the crack in the core barrel, and it could not be found. If you looked at the coloration of the core barrel, either sitting in place or moving around on a crane as it's

going into the vessel --

MR. RUSCITTO: With the bright lights of the containment it's conceivable he might have thought he saw something.

MS. TRACY: Yet it was dismissed as something that had been scored and that had been dealt with at one point in their documents --

MR. RUSCITTO: I can say unequivocably that his description of that is not accurate to what the core barrel was when I inspected it.

MS. TRACY: Did you read the document that was generated?

MR. RUSCITTO: Yes.

MS. TRACY: And there was nothing about scoring at all?

MR. RUSCITTO: Yes, in his affidavit there was. In the affidavits of the people who went out and inspected it, both in his presence and afterwards independently, no one was able to identify either a crack in the zigzag shape which he described, or the stop holes that he said he thought had been drilled in to prevent the crack from spreading. There just has been no substantiation of that issue, and from the NRC's point of view we don't

feel that there's anything to pursue that.

MR. CERNE: You're right. If we thought there was a crack in the core barrel, we certainly would pursue it.

MR. RUSCITTO: You bet.

MS. TRACY: It would have been really considerate of you to have gotten back to me, so --

MR. CERNE: We have given you the courtesy of incomplete documented inspection findings.

MR. RUSCITTO: We don't normally give preliminary inspection findings out.

MS. TRACY: So you are going to put this in a report?

MR. RUSCITTO: It will be in a future inspection report.

MS. TRACY: Okay. Because I had written to Bill Kane a number of times about this, and never heard anything back about it. So I appreciate you're giving me a preliminary.

MR. HAVERKAMP: I believe we did respond to that matter. In one of the letters that we sent you this year we also included references in the letter that when you gave us information about

the crack in the core barrel, we said that we believed we had enough information to pursue the matter. We did not need anymore information. At that point, as far as our interaction with you is concerned, we had no more questions to ask.

MR. RICHARDSON: I think her question or her concern was that we had not been apprised of what your evaluation was.

MR. RUSCITTO: That will be included in a future inspection report.

MS. TRACY: Do you know when, or do you have any idea?

MR. CERNE: No.

MR. DURR: I think, for the record, that action that you took was early this Spring.

MR. RUSCITTO: It was immediately after we got the allegation because the supervisor was leaving the site --

MR. HAVERKAMP: July or August.

MR. RUSCITTO: We were able to get to him before he left.

MR. CERNE: With some of the issues that are here and how we are going to package this in an inspection report, instead of scattering and

shotgunning it today, that's sort of an administrative decision. But to date, these are the inspection findings that we have on this issue.

MS. TRACY: You are not going to really go into it any further. I'm just curious because I know that you've put out a couple of inspection reports since you apparently looked into it, and I was just wondering when I would have something to send to this guy, who feels like he sort of put himself out on a limb to bring it up.

MR. RUSCITTO: I can't commit --

MR. CERNE: That will be an administrative and a management decision.

MR. RUSCITTO: Management is trying to make a decision on how to best deal with the remaining issues that have not been put to bed. That's the best I can tell you.

MS. TRACY: Management?

MR. RUSCITTO: NRC management.

MR. DURR: Us. The buck stops here.

MR. CERNE: Without belaboring the point, it's consistent with our philosophy to satisfy ourselves that there is not a problem.

MS. TRACY: I am sure. I would

definitely believe that you would be concerned about this and want to satisfy yourselves.

MR. RUSCITTO: I think if there was any indication; that we felt that there was a defect in the core barrel, it would be grounds for significant re-inspection.

MS. TRACY: I will get back to him and let him know what the conclusions were.

The other item was the falsification by a vender of certification required from the manufacturer. Were you able to look into that?

MR. CERNE: That's one, as a matter of fact, when we were going through trying to package your items, where it stood in your November 12th letter 1 through 12, where it stood in the stuff you gave Jacque, A through M, where it stood in previous inspection reports, and to tell you the truth, we couldn't find anything on it.

MS. TRACY: You couldn't find it?

MR. CERNE: Which issue is it? Can you identify A through M?

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(Whereupon a short break was taken at this time.)

(Ms. Gentleman, Mr. Greenstein, and Mr. Haverkamp excused themselves from the meeting and are not present at this time).

- - -

MR. DURR: Let's reopen the record. We're back to you. Sharon.

MS. TRACY: Tony had asked me, and I understand your question to be, where was this issue raised. And where it was raised was in my answer to some of the questions that Jacque had asked me. Perhaps it was Bill Kane.

MR. CERNE: Could you point that out?

MR. DURR: In the transcript?

MS. TRACY: In the cover letter. In the cover letter to my response to some of those questions there were two issues raised. One was the issue of the crack in the core barrel, and the other was the issue of falsification by a vender of certification required from the manufacturer. Do you see that there?

MR. CERNE: Yes.

- - -

(Mr. Haverkamp is now present at the meeting).

- - -

MR. CERNE: To answer your question, we haven't done anything with that, and Mass. Gas and Electric is not a safety related supplier. It has to do with turbine building work, and it would be a management decision as to whether we do anything with it at all, given the fact that the vender you are mentioning here is not a safety related supplier.

MR. HAVERKAMP: Before we talk anymore specifically on the record, I guess I would like to get a discussion off the record, if I could --

MR. RUSCITTO: We are already on the record.

MR. HAVERKAMP: I know, but you haven't identified yet the vender. Is that right?

MR. CERNE: No. Before you walked in Sharon identified the reason I couldn't find it in the attachment things she put it in the cover letter to the response to Jacque's report. So I was looking for it in the information you gave Jacque on April 20th and couldn't find it.

MS. TRACY: I see.

MR. CERNE: So that's where my question mark drew a blank. Now you've pointed it out to me, and this is the first time I'm looking at

it in terms of what we would do, if anything, to tell you right now, just like we did on the core barrel, the status. We haven't done anything with that yet. It will be a management decision whether we do anything with it, given that that, as I know it, is a non-safety related supplier. So the vender application would not require QA.

MS. TRACY: And if you need further information, you will contact me.

MR. HAVERKAMP: Yes. We would like to discuss this separately because I don't want to get too much information on this record as to what the specifics of the matter are. We will continue the discussion later.

MS. TRACY: Okay.

Now, there is some issues you wanted to talk about, Don, but are not related to what is right in front of us. Do we want to wait until later?

MR. HAVERKAMP: Have we covered all of the issues that you considered important to discuss that were on your agenda?

MR. GRAY: I would like to say something about D, 6(D).

MS. TRACY: Okay.

MR. GRAY: Previously there was a question of 100 bad welds. That was in 1984. It was not on the service water system. It was on piping in the radioactive pipe tunnel. The alleger, when interviewed by our Office of Investigation, said that he did not consider those to be 100 bad welds. He only didn't like them. But he was not of the opinion that they were truly bad welds.

What I'm really asking, is D talking about that 100 welds which were not in the service water system, or are you making a claim that there are 100 bad welds in the service water system. I suspect that your answer is going to be that you are not.

MS. TRACY: I suspect that your answer is correct; that there was some confusion there.

MR. RICHARDSON: One thing that might help clarify that is that that alleger had also discussed with us some welds that -- my understanding of the area he was referring to was service water piping in the yard -- that were also questionable. His specific concern was that the pipe that was being welded had not been adequately pre-heated, and they

had problems with condensation gathering in the lower area of the pipe, and this was producing some porosity in the welds. I don't know whether he had also found other problems as well, but I believe perhaps what we've got here is an inadvertent combination of the two. Where we would have a question concerning the service water system, I believe what we would be dealing with is the effect of these welds that he had told us about.

MR. GRAY: That's the 3 bad welds that he talked about in the April 20th interview.

MR. RICHARDSON: I believe they were discussed in the April 20th interview.

MR. GRAY: And we've answered those in the 87-07.

MS. TRACY: Yes. You did address that in the 87-07, that's true. You are correct. There is an incorrect mixing of issues.

MR. GRAY: 6(D) is no longer a problem from our point of view.

MR. RICHARDSON: From our point of view one of your recent reports indicates that there is beginning to be identified a little bit of flaking around some of the repair joints. I believe what was

cited specifically was around in the area near the service water valve number D-15. It was one of the most recent reports.

Basically our concern, I guess, was whether the effect of the welds that the alleger perceives to be questionable on the integrity of the system would be -- whether the quality of those welds would be affected by the microbiological contamination problem in light of the continuation of flaking.

MR. RUSCITTO: I think you've got apples and oranges here. You're talking about weld problems. What you're referring to in our inspection report is liner problems. The fact that that liner is having a problem where the welds are, makes sense because that's the place where the liner was repaired.

MR. RICHARDSON: Yes.

MR. RUSCITTO: But the flaking problems and any problems that are hypothesized on welds are 2 separate issues. The answer to your question is, no, we don't see that as a problem.

Number 2, we've already said that we don't believe that we have a MIC problem in service

water anyway. So even assuming there were problem welds, which you have no indication of, we don't see any reason to worry about MIC there at this point.

MR. RICHARDSON: Okay. I guess our concern was that if the concrete lining is flaking, does this expose the steel in the pipe.

MR. RUSCITTO: Yes. That is of concern to the NRC, but not because of MIC.

MR. CERNE: And not because of the weld problem. The pipe is designed to have a cement lining to prevent that from happening. It has nothing to do with any allegation.

MR. RICHARDSON: You're aware of it and keeping an eye on it?

MR. RUSCITTO: Oh, yes. Unrelated to MIC though.

MR. DURR: Is there anything else that you would like to discuss relative to the agenda or the items that are in your November 12th letter?

MS. TRACY: I think that generally we have gotten answers to your -- or I would know how you would respond to each item now.

So if you would like, we can go back to the process we were going through before we

diverted to this.

MR. DURR: If you have questions in there, yes.

MR. HAVERKAMP: I would suggest that we go back where we left off and at least walk through the issues, and see if there is any additional questions you have.

MS. TRACY: Right.

MR. DURR: We are just beginning 2.1.4. This was the electrical conduit fire. I would like to respond to A of that, because there is difficulty in identifying the location of the conduit there is no guarantee that the appropriate system was examined.

Based on the drawing you gave me, and then the subsequent drawing which was made part of the report, and the actual building drawing, I think it's very clear that we have the correct corridor which the alleger was describing because of the lead window that he was talking about, and the door and all those things, and the computer. All of that fits very well. So it's narrowed down to that corridor. I think that's the upside down photograph in the report, my secretary did to me.

Needless to say, if you look at that corridor, it's very obvious that there are only a couple of conduits that even remotely resemble the things that he was talking about. So I feel very confident that we are in the right location, and I feel even more confident because of his 20 feet down the corridor that that narrows it down to that single transformer in that lighting distribution panel. So I feel very comfortable that there is no question in my mind that we've got the right location, and the tests that we performed would indicate -- not only did I make them do electrical insulation resistance tests, but I made them take the covers off so I could look inside the conduit where the alleged fire took place. And there was obviously no fire damage in that area.

Now, it may have occurred and they replaced it or fixed it, but right now I don't think there is any question that the electrical aspects of that are safe, and there's nothing to be concerned with.

MS. TRACY: The issue you raise about them perhaps having replaced it is one that I hadn't considered before.

MR. DURR: Assuming the alleger was telling the truth and there was fire in that area, and that was really the only place it could be, then if there was, in fact, a fire, it's been repaired.

MS. TRACY: That would explain why you couldn't find any evidence of the fire.

MR. DURR: There is no evidence today that there was any damage to the cabling and the wiring.

MS. TRACY: Because I'm positive that he's telling the truth.

MR. DURR: I don't have any reason to doubt him.

MR. RICHARDSON: If any repair work had been done, would it be documented?

MR. DURR: I don't know that because that's non-safety related stuff. It's a lighting transformer. It provides no safety function. Very little equipment in that building is safety related. I think that's a correct statement. There are only one or two components in that building that are safety related at all.

Anything else on 2.1.4?

MS. TRACY: No.

MR. DURR: 2.1.5, this is the emergency feedwater system.

MR. RICHARDSON: The first time that question was discussed it was in 86-52. Some of the aspects of the concern I raised did not appear to have been addressed, specifically with regard to the emergency feedwater pumps. I was concerned that they were both in one room with no barrier between them to prevent fire from damaging both units.

MR. DURR: That particular aspect was written up in the safety evaluation report. It was reviewed by the licensing arm of the NRC. They use the standard review plan which is a document that says look at A, B, C, D, and tell the reviewer exactly what to look at. Then if there are any deviations from that, we have to resolve them. That took place. That is documented. It's put out in a new reg, and I forget the number of it. But anyway, that design aspect of the fact that both pumps were in the same room was looked at and accepted. So a technical expert has reviewed it and accepted it.

MR. RICHARDSON: As my understanding goes -- correct me if I'm wrong -- but that was accepted on the basis of the start-up feedwater pump

being available to perform emergency feedwater function?

MR. RUSCITTO: Not exclusively.

MR. DURR: Not exclusively, but that was a consideration. It was a consideration, but not the sole consideration.

MR. RUSCITTO: There is no requirement that emergency feedwater pumps be in separate buildings. I don't know of any nuclear power plants that have emergency feed pumps in separate buildings.

MR. CERNE: There are other --

MR. RICHARDSON: Is there a requirement for a fire barrier between them?

MR. CERNE: No. They are allowed to be in the same fire zone if it's a low --

MR. RICHARDSON: Low fuel.

MR. CERNE: Low fire hazard area. There are separation constraints, and it is tied somewhat to the start-up feed pump, but not exclusively. That is in accordance with design. That design has been reviewed by our experts in Washington, and it's been built in accordance with that design.

MR. RICHARDSON: I'm aware that you've

approved the set-up as it is, but I'm still concerned in that the start-up feed water pump apparently is not constructed to seismic standards.

MR. DURR: Let's address that question. You have to understand that the emergency feedwater pumps are the primary source of emergency feedwater.

MR. RICHARDSON: Yes.

MR. DURR: And they are seismically qualified, and they are capable of performing.

With that issue solved, we don't even take credit for the start-up feedwater pump. So why does it become an issue?

MR. RUSCITTO: If it's a matter of your personal technical opinion, that's different than not meeting established criteria. I think that's the point here.

MR. RICHARDSON: It could be. I'm not comfortable with it. It doesn't appear to be the best possible set-up.

MR. DURR: You can't come up with a scenario under the design criteria where that's unacceptable. That's what you have to come up with. That's the case you have to make. Would the design

criteria present a scenario where that doesn't work? Do you see what I'm saying?

MR. RICHARDSON: Yes.

MR. DURR: Because the first thing I have to do is, I have to lose my main feedwater pumps, and then I have to be on emergency feedwater, and now I've come up with a scenario where I end up losing both of my emergency feedwater pumps, and we can't do that under a "credible" accident scenario. That's the criteria that we're working from. That's the rationale that was driving all of this. You have to come up with why can't it work. Then once you can do that, then it may need redesign.

MR. RICHARDSON: Okay.

MR. DURR: Next? Is that it with that issue? Any other questions?

MS. TRACY: No.

MR. DURR: Moving on to 2.16. No present comment. Okay.

The same way with 2.17.

MS. TRACY: 2.17 was dealt with.

MR. DURR: Under 2.4. I understand.

2.18, we're back to cold pulling.

MS. TRACY: Cold pulling. We already

dealt with the issue of the 13 stage.

MR. RICHARDSON: I'm concerned about your analysis of the cold pulling problem that was presented to you. You have discussed the one instance of cold pulling that was documented at the plant. A number of the people that we've talked to have said the same thing, and judging from their descriptions they don't appear to be talking about that same incident.

Now, the analysis that you appear to be relying on to say that cold pulling was not a problem, appears to address only the use of what was called the Dearman clamp; that 70 sub-systems were analyzed to see if the stresses put on them by the Dearman clamp would be excessive. The problem is that most of the people that have contacted us about cold pulling haven't been talking about that clamp. They've been talking about comealongs and chainfalls and the like, and you haven't got a 1 1/4 inch -- you haven't got a positive stop at 1 1/4 inch of travel.

MR. DURR: I'm going to probably open my mouth and put my foot in it, but let me try to address that. This is really Kamal's area. But the 70 analyzed cold pulling scenarios done by the

licensee did not involve the Dearman clamp. Those were 2 separate issues. The Dearman clamp was one thing, and the 70 analyzed cold pulling situations were another. They were totally separate issues. They were talked about in the same breath because somebody, and I think it was David Day, made some remark concerning using Dearman clamps and squeezing pipes out of round and all of those kinds of things.

That was one issue that we addressed, but the separate issue was that the thing that umbrellas all of those cold pulling instances, if they did occur, was the fact that the analysis that the licensee did shows very conclusively that you would have had to cold pull excessive amounts before you would exceed what is allowable. Is that a good characterization?

MR. MANOLY: Yes.

You brought up, I think, 3 different examples of what you characterized as cold pull. One is the CBS piping --

MR. RICHARDSON: That's not one of mine.

MR. DURR: No. That was David Day from 40 feet up.

MR. MANOLY: If you read what we wrote here on that particular piping, and the flanges were -- I believe in that piping that the weld was done after the --

MR. DURR: The weld that he was talking about was done, and then the flanges were made up. So there's no way that that could have been a cool pull situation. If it would have been cold pulling, it would have jumped, and they didn't have any problem with that.

MR. RICHARDSON: I can't really say anything about that because that's not something I know personally.

MR. DURR: That brings up a very good point. In the service water piping where there was alleged cold pulling they went back and took bolts out of a lot of this piping, and they didn't have any instances of the piping jumping around.

MR. MANOLY: 30 valves.

MR. DURR: That's a good indication. Had they had excessive cold pulling in those systems, they would have had trouble getting the bolts back in those things, and that wasn't the case.

MR. RICHARDSON: Is the area in which

he was talking about cold pulling close enough to the valves that any stresses that were being incorporated would have made themselves known when the valve was disassembled?

MR. DURR: The valve was not that far from the flange. It's in the picture.

MR. MANOLY: It's very close to the tank.

MR. GRAY: It's close for reassembly.

MR. DURR: I remember taking the pictures. That's my photography. This picture here, see the valve? That's a CBS line.

MR. RICHARDSON: The service water one is a different one.

MR. DURR: Yes. The service water one, that's a big 30-inch line or something like that.

MR. RICHARDSON: Okay.

MR. DURR: We have pictures of that one too.

MR. RICHARDSON: I remember there was some question in Mr. Day's opinion as to whether you had looked at the area that he had told you about on that. I'm not exactly sure. I don't think I should

be asking questions about it.

MR. DURR: This picture here is in inspection report 84-- whatever it was -- 06 or 07.

MS. TRACY: 84-12.

MR. DURR: This is the same picture that was in the other report, and he said, see that picture. That's the area I was talking about. We not only looked then, but we looked at it in this report also. The bolts were removed, and that plate didn't jump.

MR. MANOLY: In '85.

MR. RICHARDSON: Okay, if that's what he said.

The reason I was concerned about your analysis, or I guess the utility's analysis of cold pulling, is that perhaps in the way the inspection reports have been written, where you've handled the subjects as far as our concerns, the appearance was that you were relying on an analysis that was based strictly on the use of the Dearman clamp.

MR. DURR: No.

MR. RICHARDSON: If that's not the case, I would appreciate a clarification.

More specifically, there is a report

that was done by, I guess, a consultant group to the plant in 1982. It was done basically to INPO guidelines, and it's in the Local Public Document Room under a cover letter by you that refers to it as INPO report. But there is a citation in that report that there were a number of non-conformance reports written in early 1982 that dealt with cold pulling. The specific area in which the report was discussing those was in a concern as to a lack of trending of problems to identify recurring deficiencies.

Given that this is criticized in that area in that report, and given that your report appeared to be relying on analysis of stress induced by Dearman clamps, my concern there was whether the utility had adequately investigated the problem and the use of other equipment. Have you reviewed the INPO report?

MR. DURR: Have I personally? No. Let me respond to it. You guys correct me if I'm wrong, but I think I understand the question.

It goes back to the fact that UE&C imposed originally a very strict, unreasonably tight cold pulling tolerance on the piping systems. This made it almost impossible for the people in the field

to make a fit-up where they didn't violate it. Therefore, it generated an enormous amount of non-conformance reports because QC was doing their job writing up cold pull when they found it. So this only supports our argument that QC was doing their thing.

Subsequent to that, much later, they recognized that those cold pulling tolerances were unrealistic, and they generated a more realistic set of cold pull tolerances. But during that period where they had these unrealistically small cold pull tolerances QC was writing them up like they were supposed to. They were doing their job. This generated an enormous amount of reports.

Now, I suspect that this is what INPO is talking about. They've got all of these non-conformance reports, and nobody is trending them. It's QA doing their job which, I guess INPO's concern would be, is putting an unnecessary load on QC, and somebody ought to look at the root cause and fix whatever the root cause was. Am I in the ballpark?

MR. MANOLY: Yes.

MR. DURR: So that's the way I understand the story. I think that's what we say in

87-07, is essentially that they unnecessarily restricted themselves, and under today's 20/20 hindsight they should have had a much more liberal tolerance on cool pull, and that would have done away with a lot of those non-conformance reports.

MR. RICHARDSON: How does that square with the information you put in 86-52 where the people who were identifying cold pulling pipe were unaware or the prohibition against it where --

MR. DURR: Wait a minute. That statement didn't make any sense. You may want to rephrase that. You said that the people that were identifying cold pulling were unaware of it. If they were identifying it, they must have been aware of it.

MR. RICHARDSON: There's a difference between the people identifying the problem and the people who were actually doing the installation work.

MR. DURR: Who do you mean by the people actually doing the installation work?

MR. RICHARDSON: Let me see if I can find this thing.

MR. CERNE: While he's doing that let me clarify one point. The Dearman Clamp issue was related to the 70 systems in the common thing,

50.55(e). When the licensee identified under 50.55(e) that they had exceeded the tolerance on the Dearman Clamps, they went back and analyzed the 70 systems that could have been affected, and did an engineering analysis of each one, taking the worst case situation that the plant could have applied to that pipe and dispositioning it as not being detrimental to the stresses in the pipe.

What you said was also correct though. The thing they did in tracing the ELP allegation was separate from that, as was your investigation. So there were 2 separate investigations, but their investigation of these 70 systems was related to the 50.55(e) which was related to the use of the Dearman clamp.

MR. MANOLY: It has two functions. One is to -- mainly it's to bring together the 2 ends of the pipe. The allegation was that the Dearman clamp would change the cross section of the pipe on one end. That's one issue.

The other issue is that when the clamp brings the 2 ends together that have to get welded, that it might have brought it more than the tolerance of 1/8 of an inch. And the maximum that

the pipe can handle is 1 1/4 inch. They took the 1 1/4 and applied it to those 70 systems, and tried to determine how acceptable these systems are. That's what our report addressed here.

MR. RICHARDSON: How do you come with out of 70 sub-systems, you've got a total 88 on the graph --

MR. MANOLY: That system involves many piping systems. The piping system is not just one row of pipe.

MR. RICHARDSON: Any one of those could have been broken down into a number of components.

MR. MANOLY: Yes.

MR. RICHARDSON: The citation I'm talking about is partially on page 74.

MR. DURR: Of which report?

MR. RICHARDSON: Of 86-52.

It doesn't specify who identified that particular incident, but in the discussion it mentions some degree of unawareness by the piping contractor, and again, it doesn't specify the exact nature of the cold pulling prohibition.

MR. CERNE: That was one of the things

we cited with the problem with Pullman-Higgins in one of our SALP reports.

MR. RICHARDSON: Is that the construction practices --

MR. CERNE: Yes, contrary to specs, acknowledged specs. That was one of the reasons it contributed to their 3. The resolution of the 50.55(e) and the Dearman clamp issue has, again going back to our basics, resulted in a plant that is built properly.

MR. RICHARDSON: The problem with the Dearman clamp analysis that I have is that it doesn't take into account any possibility that anyone was using any other equipment. The other people that we've talked to, they say comealongs, they say chainfalls. I saw a chainfall being used in the turbine building.

MR. CERNE: They analyze safety related systems because we're not concerned with non-safety systems.

MR. RICHARDSON: Wait a minute. If that's indicative of the same practices that were used in the safety system --

MR. RUSCITTO: It isn't because --

MR. CERNE: When you talk about turbine building work and non-safety work, you can't naturally draw a conclusion over on the safety side because there is no QA involved there. There is no independent look at whether people are violating procedures or not.

MR. RICHARDSON: Was the cold pulling prohibition in effect for both the B31.1 and the ASME systems?

MR. CERNE: Yes.

MR. RICHARDSON: So if I've seen somebody trying to force a pipe into place with a chainfall on a B31.1 line system, is it inconceivable then that given that you've got a contractor that is not fully familiar with the specs, that the same thing could not have occurred in the safety systems?

MR. CERNE: It's not inconceivable, but based on our evaluation of the QA program we believe that the QA would have caught that because that was one of the things they were looking for in fit-up. They had to do fit-up inspections for every weld.

MR. DURR: You have to understand that the difference here is that there is a quality

assurance/quality control program over the safety related, and there is none or very little over the non-safety related. So that if those practices were being employed in the non-safety related, that's one issue. But if it's being employed in the safety related, you have the factor of quality control/quality assurance that's preempting all of that, as evidenced by all the non-conformance reports that were written against cold pulling.

MR. MANOLY: Closure welds on safety systems are witnessed at the hold point at the fit-up and --

MR. RICHARDSON: Do you check at that point to be sure, or do they --

MR. MANOLY: That's what hold point means; that the QC would be there. It is not a requirement on non-safety closure welds.

MR. CERNE: They have to be there for the fit-up and tack process.

MR. MANOLY: We state in our report that the requirement for a cold pull was addressed as early as 1978 because I saw a revision of that procedure, X9, Pullman-Higgins. The requirement for cold pull was established since 1978.

MR. RICHARDSON: Whose personnel were responsible for witnessing a closure, the fit-up at the closure weld? Was that the piping contractors?

MR. CERNE: Pullman-Higgins level 1 QC inspectors, as audited by Yankee level 2 surveillance inspectors and by Yankee Framingham auditors.

MR. RICHARDSON: And the auditors only --

MR. CERNE: Surveillance does a sample, and the QC inspectors do --

MR. RICHARDSON: I was working for Pullman at the time, and I was trained at about the time just before this incident occurred and --

MR. DURR: I think I know where your question is going.

Let me go back to a point that I wanted to make before. Within the construction group there are selected people who have to know that cold pulling is a requirement -- or that the contraints on cold pulling are a requirement, and that's the engineers, the superintendents, the foremen, and the people that are supervising the work in quality control. Now, have any of the allegers fallen into

that group? Because those are the people who are responsible for implementing those specifications and drawings and procedures. It's the supervisory group that has to know.

So for us to make a determination that nobody knew about it, you have to look at that population. Just because a pipe fitter didn't know there was a prohibition against cold pulling, he's working under the supervision of a foreman at GF, or a foreman or a superintendent, and the fact is, that's the guy that blew the whistle on cold pulling in the feedwater piping. It was a superintendent. It's those people that are responsible for the implementation.

So if it's not that population that you're talking about, it's conceivable that there are people out there who didn't understand the restrictions on cold pulling. Until you start talking about that population, it doesn't have any meaning to us. Those are the people I really need to know.

MR. RICHARDSON: So the evaluation that's cited in here was done strictly for the effects of the Dearman clamp; is that correct?

MR. GRAY: That's incorrect.

MR. MANOLY: No, that's not correct. We said that the maximum movement of the 2 ends of pipe that would be welded would be 1 1/4 inch. That's why we evaluated 70 systems with a maximum of 1 1/4 inch movement.

MR. RICHARDSON: But you didn't consider any movement beyond that?

MR. MANOLY: Because the Dearman clamp cannot be closer than -- you can't use it if it's more than 1 1/4 inch.

MR. DURR: Now you've got me curious. This table indicates that the maximum cold pull in inches exceeds the 1 1/4 by this much. That's your question, right, why these numbers go beyond 1 1/4 inch?

MR. RICHARDSON: No. Look at it the other way.

MR. MANOLY: The number of systems.

MR. RICHARDSON: The number of systems.

MR. DURR: I understand that, but your question was, it only addressed the inch and 1/4. What I am saying is, this indicates that you could go

well beyond an inch and 1/4 in a lot of systems, and it wouldn't not make any difference either, whether you used a Dearman clamp or what you used.

MR. RICHARDSON: In some, but not all?

MR. DURR: In some, but not all. You can see the distribution here. It's way over. It exceeds its 3 1/2 inches and beyond in most cases. I think that may be part of the answer to your question.

MR. HAVERKAMP: What table are you referring to, Jacque?

MR. CERNE: Those aren't examples of cold pull. Those are examples of what the design allows for --

MS. TRACY: Shall we move onward?

MR. DURR: The next one, 2.1.9.

MS. TRACY: I would say on this issue the question is, what are the causes of the problems. The reason we're asking the question is that the concern that was raised about grit in the valves was said to be a negligible concern. However, there was further failure of valves. So we're asking the cause of those failures to see if the concern we

raised corrolates with them.

MR. DURR: These were later inspection reports. I guess, Harold, this is your stuff.

MR. GRAY: Yes.

First, there is very negligible grit that has been found in the service water system. The source of water for the service water system is such that it's unlikely to draw grit in from the outside.

The failure in the valve seats is not due to grit, but was due to a design problem. If this was a section of the valve, it's the inner section of the curved surface that's rotated 90 degrees into a flat section that caused some abrasion and eventual tearing of a very small portion of the rubber liner. So it was completely unrelated to grit, but that is explained in the later inspection report.

MS. TRACY: So that's talking about the wear in the valve body liner?

MR. GRAY: That's right.

MS. TRACY: Does that also refer to the generic problem with the 30 Fisher valves, or was that caused by a different problem?

MR. RUSCITTO: That is the 30 Fisher

valves.

MR. CERNE: The Fisher valve problem is the valve liner problem.

MS. TRACY: So these 2 different reports are talking about the same valves.

MR. CERNE: We have several reports that address that issue.

MS. TRACY: So that's basically a manufacturing problem, rather than a problem with something from the outside?

MR. DURR: It's in the original design of the valve, that's correct.

MR. RICHARDSON: I've got a question for you in relation to that. One of your reports on that subject notes that Yankee had not, at the time at least, made formal notification to the manufacturer that this problem had been discovered. And in the discussion at the SALP meeting with the licensee back a month or so ago, somebody -- was it Mr. Kane? -- got into a discussion in the area of the steam powered emergency feedwater pump, questioning again whether Yankee had been in touch with other plants or with the manufacturer as to how to handle that particular situation.

Is this problem with passing on communication back and forth when they find a problem of some degree of severity? Is that a matter of concern to you? What do you plan to correct that?

MR. CERNE: If they violated the Code of Federal Regulations, we would write a violation on it.

On the original problem of the Fisher valve seats, they reported it under a 10 CFR 50.55(e) and they made a valid report, and the corrective action was tracked under that mechanism. When the problem recurred more recently, they reported it under 10 CFR Part 21. That was the regulatory reporting requirements. So there wasn't any evidence where they had violated reporting requirements.

MR. RICHARDSON: Is the notification or discussion between the manufacturer and the utility, or from one utility to another, is that a requirement, or is that merely recommended?

MR. DURR: It's only required to report it to the NRC. We look for generic problems also.

MR. RUSCITTO: That was a recommendation made by one of our specialists.

MR. CERNE: But the reporting requirement under the original problem, the Fisher valve seat problem, was reported under 50.55(e). They met their regulatory requirements, and it is the NRC's job to do something with that. If it was a generic problem, there wasn't any evidence of it at the time.

MR. DURR: Next issue?

MS. TRACY: 2.2.0.

MR. DURR: We've discussed that one, haven't we? Is that the one where we decided we had mixed 2 issues together?

MS. TRACY: Yeah. I would say that they aren't necessarily mixed here. Maybe I could use a little clarification.

MR. DURR: This is the one that's addressed in inspection report 84-12.

MS. TRACY: Right.

MR. DURR: We have already addressed that. Are there any questions concerning it?

MS. TRACY: Yes. There's a couple of questions. One is, it's being downgraded in safety requirements when the bad welds were discovered. The other question has to do with the OI report, and

perhaps Harold can explain again why the OI report is not applicable to these welds.

MR. GRAY: First, the 100 poor welds in the service water system are not in the service water system, if we're discussing the OI report.

MS. TRACY: Okay. They're in the radioactive pipe tunnel?

MR. GRAY: That's right.

MR. CERNE: Which were the subject of the 84-12 inspection, and they were never downgraded because they were safety related. That was addressed in that report also. That's the David Day allegations that have resurfaced exactly verbatim.

MR. GRAY: The OI report includes an interview of the person that David Day received his allegation from.

MS. TRACY: Right.

MR. GRAY: When OI interviewed that person, that person said that he did not have a problem with the 100 welds because they were bad. He had a concern about them with respect to the internal surface, but he did not consider that the welds were bad. The exact verbage is available in our OI report, but it leads us to conclude that there was

nothing to follow at that particular item.

MS. TRACY: When you say the inside surface is bad --

MR. GRAY: He had a concern with the automatic welding process and its fusion of the K insert for the route pass of the weld, and he only had an opinion that there was a problem there, but he did not know for a fact that there was a problem. In 84-12 we looked at some of those welds on the inside of the pipe with mirrors and did not find a problem.

MS. TRACY: So it's a presumption on his part that this particular equipment didn't do the job properly. But when you looked at it with mirrors, you felt that he was wrong in his assumption.

MR. GRAY: That's true. But more importantly, he didn't feel that there was actually a problem, the alleger. When the alleger was interviewed in detail, he concluded that there was not a problem.

MR. DURR: Anything else?

MS. TRACY: I would say not.

MR. DURR: On 2.2.1 you didn't have any questions. Do you have any questions now? We

addressed that in 2.4.

MS. TRACY: Right, we did.

MR. DURR: 2.2.7 was on the pump.

MS. TRACY: This was the issue I think you referred to earlier, Jacque, where you said that it was something that the engineers were well aware of, and were working on and so forth. I was wondering about a timing discrepancy here, how soon they caught on, if they knew right away that there was a problem, that kind of thing.

MR. DURR: No. They knew very well that there was a problem. Part of the solution to the problem was a redesign. That was the time element. They had to go back to the manufacturer and redesign some of these supports to accommodate the system.

MS. TRACY: That's what took so long.

MR. DURR: Yes. But here again, these are non-safety related components.

MR. RUSCITTO: I was personally aware of this issue long before it was brought up as an allegation, and as soon as the words came out in the allegation, I was able to steer Jacque to the exact room where it was. We've been following it only from

an interest point of view because of it's non-safety classification.

MS. TRACY: On section 2.3.1 the concern was that there was a structural problem that was apparently discovered by the Nuclear Regulatory Commission, and came up when we raised the issue of the wracking of the building which you pretty much dismissed, but it was a concern that this lack of structural integrity was discovered by the NRC rather than --

MR. DURR: We did our job.

MS. TRACY: You certainly did, Jacque. I'm sure Tony and Dave did too.

MR. DURR: Yes.

MS. TRACY: However, it seems that you all had to do the job because the licensee did not, if you understand what I'm saying. And for that reason this was raised as a further example of the fact that the utility is not necessarily as careful as might be expected.

MR. DURR: That's why we have a job. That's one of the reasons that we are here, is to make sure that the licensee complies with Code and Federal Regulations, and where they don't, we force

them to.

Now, if we felt it was a wide-spread problem, then we would have taken different action obviously. But this is a very focused look at a particular structure, and I would have to defer to Kamal because this is really his area. But it's an approach method, and sometimes engineers take different approaches, and you have to call that into question, whether it's a good judgment. I don't know in this particular case what the implications were.

MR. MANOLY: The staff had disagreements with the licensee design engineer, at that time UE&C, about the methods of incorporating the properties of the structure -- the concrete, not the steel. The issue was about steel changes. The steel has no influence on the validity of seismic analysis. To put your mind at ease, there is no relation. Steel contributes almost nothing to the seismic analysis. It's the concrete. The analysis was primarily on the concrete part. It was identified in the IDI inspection, and the purpose of that, you do the IDI early enough in the process so that the staff will have a good feel of which way the architect or engineer is going with the analysis of

the structures. Like Jacque said, it was caught and addressed.

MR. CERNE: Another factor, the IDI, we picked this out specifically out of the area, but if you go to the summary of the IDI, it clearly states what the purpose of that entire inspection was and what the results were. You will find that the IDI records the NRC's overall result of that inspection which is a plant in general compliance with the design, and built in accordance with that design.

MR. DURR: This wasn't the only area looked at.

MS. TRACY: I realize that.

MR. MANOLY: The plant, they have gone beyond typical normal practice in some of the other seismic analyses, way beyond even our requirements that I know of.

Do you have any other questions?

MS. TRACY: At this point I'm not sure that I do.

MR. DURR: As I have written down here, we owe you an answer on the acceptibility of the reactor coolant pump levelness after heat up. We owe you -- or you owe us the CBA drawings for

non-seismic versus seismic.

MR. RICHARDSON: Will you give us an answer on that when you've had a chance to investigate that one?

MR. DURR: Yes.

MR. RICHARDSON: There's quite a discrepancy between your statement that that was seismic qualified, and the papers I have that say it wasn't.

MR. DURR: We can give you an answer on the question, if it's only a question.

MR. RICHARDSON: I think I would prefer to word it as an allegation.

MR. DURR: No. We will make that determination. Once we get the paper and it conclusively establishes that it says non-seismic on your drawings, and we say seismic in the report, that will make it an allegation. And then we will do something with it in the normal allegation process.

But if we don't find that descrepancy, or it's a simple answer, we will give you the simple answer.

I assume you want those drawings back. I sent them back to you once before.

MR. RICHARDSON: I can make copies. I don't need them back.

MR. DURR: Fine. Just so they're legible.

And then we have an allegation, a new allegation on the EFW weldalet, on a 8 to 10-inch line, wrong paper configuration, and scribed identification number?

MR. RICHARDSON: That's correct.

MR. DURR: And we will respond to that.

MS. TRACY: There was one other issue.

MR. DURR: Okay.

MS. TRACY: Scott Kennedy raised this, and he raised it in our April meeting as well. I think that in the transcript from our April meeting it's identified more clearly, but he referred to some seismic restraints that were put in backwards.

MR. DURR: Yes. I went down there and looked in the area that he said, and we couldn't find anything.

MS. TRACY: Nothing?

MR. DURR: We couldn't find a thing.

MS. TRACY: No seismic restraints?

MR. DURR: He's going to have to give us a much better description on what his concerns are because I looked at the bottom of about 3 or 4 different stairways in the containment building, and I couldn't find anything. If there is anything there, we need additional information. But, yes, I looked at that. The fact is, I took pictures of that whole area down there.

MS. TRACY: Did you?

MR. DURR: I couldn't find anything.

MS. TRACY: No seismic restraints?

MR. DURR: No seismic restraints.

MS. TRACY: I'll get back to him on that.

MR. DURR: He'll have to give us some more information on that.

MR. HAVERKAMP: Are there any comments regarding the Appendix B items, points 1 and 2?

MR. DURR: I think Appendix B essentially incorporates your agenda; is that correct?

MS. TRACY: That's essentially correct. I believe that we have gone through most of

these issues, or if we haven't, I can make a good assumption of what your answer would be.

MR. DURR: I would like to re-emphasize before we close the record that the issues that are discussed in 87-07 and 86-52, except for those that are considered unresolved items, the NRC considers closed, and will not do anymore inspection on those specifics items.

The items that you gave to us on April 20th that are not addressed in those reports, and the ones that we have sent you a letter on requesting additional information, will be pursued separately from these issues, and through another group. The team inspection, the 2 team inspections that took place at Seabrook, we've disbanded that group for all intents and purposes.

MS. TRACY: Your team?

MR. DURR: Yes.

The rest of these allegations will be handled through a normal allegation process.

MS. TRACY: What's your normal allegation process?

MR. DURR: The normal allegation process is essentially where there are one or two

items or non-specific items, the first thing that will happen is, as these did, all these other allegations did, they will go through the allegation review panel. The panel will decide what's to be done and how they are to be dispositioned, and they will probably be inspected on a one-inspector per item kind of thing. For instance, Tony or Dave will probably inspect most of these, that the panel deems to be inspectable.

MS. TRACY: Who is the panel?

MR. DURR: The panel? It consists of either the Director or the Deputy Director of the Division of Reactor Projects, Mr. Kane or his Deputy Director, Sam Collins, and the Section Chief and the Branch Chief who are responsible for the plant, and whatever technical assistants they need from the Division of Reactor Safety, which is my side of the house.

MS. TRACY: So further allegations that are brought to the Employee's Legal Project should still be directed to Bill Kane.

MR. DURR: To Bill Kane. He is part of the formal process that handles these things.

MR. HAVERKAMP: I would encourage, to

the extent possible, that you try to contact me by telephone on any of these matters. You don't have to wait until you have a collection of items and then send us a letter. You are certainly welcome to follow up with a letter, if that suits you. But we will try to, of course, identify the issues that are still on the table that are not closed by the inspections by Jacque Durr and his team. We will be going through a sorting process to identify how to follow those items through our construction process.

I will try to keep you informed as to how we are progressing. I'll be doing this by telephone as much as possible, and as necessary, I will follow it up with written letters.

MS. TRACY: Sounds good. I do like the written letter follow-up format. Then if there's questions in the future, we have it in writing.

MR. HAVERKAMP: We do too, but I'm encouraging telephone communications to the extent possible, so we understand the concern, and you understand what we've done on it. If there's more to do, we can work that out.

MR. DURR: Are there any other subjects we need to discuss?

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(There was no response).

MR. DURR: With that, I will close the record.

- - -

(The meeting adjourned at 4:05 p.m.).

C E R T I F I C A T E

I hereby certify that the proceedings, evidence and objections noted are contained fully and accurately in the notes taken by me on this meeting between the Employee's Legal Project and the Nuclear Regulatory Commission, held on Tuesday, December 29, 1987, at 631 Park Avenue, King of Prussia, Penna., and that this is a correct transcription of same.

NORMA CARR
Notary Public

My Commission expires
February 18, 1989

Exhibit A
7/C 12-31-87

Employee's Legal Project
P.O. Box 633
Amesbury, MA 01913
(617) 388-9620

MEETING BETWEEN THE EMPLOYEE'S LEGAL PROJECT AND THE NRC
KING OF PRUSSIA, PENNSYLVANIA
DECEMBER 29, 1987

PROPOSED AGENDA

1. INTRODUCTION: This meeting's purpose is to discuss "procedural problems" at Seabrook Station, raised by the Employee's Legal Project (ELP) in September 1986 and thereafter, and not yet addressed by the NRC. These include evidence of breakdowns in quality assurance/quality control (QA/QC), design control, document control, poor training, and the utility's ongoing inability to deal with these problems. Numerous former Seabrook Station employees have raised these concerns, and utility and NRC reports substantiate them. A breakdown of these programs, designed to ensure safe construction of the plant, means the plant has many underlying technical problems.

   The ELP provides confidentiality and legal protection to nuclear plant employees who have chosen to come forward with concerns about plant safety. Former Seabrook Station employees have brought these issues to the attention of the ELP, at what they consider to be some risk to themselves, because they believe the plant is unsafe. The ELP has a dual responsibility to these individuals: to protect their identities, and to ensure these problems are investigated and resolved. This organization also extends an offer of protection to members of the NRC who have similar concerns.

2. QUALITY ASSURANCE/QUALITY CONTROL
   a. Various sorts of debris were discarded in containment concrete.
   b. Some welds were never tested.
   c. Painters did quality control checks of other painter's work. A recent NRC report shows there is peeling paint in containment areas where the QA program was relaxed
   d. People reporting safety problems suffered harassment/dismissal.
   e. Start-up checkoffs were done carelessly.
   f. When construction procedures were violated, procedures were rewritten to allow the violations to stand. Procedures were implemented to eliminate inspection tests.
   g. During the last few years of construction, there was no quality assurance on third shift, and none for concrete on second shift.
   h. The reactor was filthy; general practices were slovenly.
   i. Dravo shop welds in the turbine building were defective and uncorrected.
   j. Weld inspections were inadequate; welds weren't properly identified; welds were performed incorrectly.
   k. Pipes were forced into place using comealongs and sledgehammers, violating procedure.
   l. A quality assurance person in charge of inspecting cadwelds in containment consistently reported incorrect figures.
   m. Concrete was poured when the temperature was too low, creating cold seams.
   n. There is exposed rebar in the cooling tunnels, and there are voids in the tunnel's concrete.
   o. There was a lack of weld safety and people were harassed if they raised

safety problems according to a QA engineer.

p. People were hired to inspect work they had previously performed according to a different QA engineer.
q. Welds were improperly certified and quality assurance was poor according to a third QA engineer.
r. A weld rejected by an inspector was penciled in with graphite, and then passed inspection.
s. Several weld inspectors, commenting on James Padavano's conviction for falsifying weld inspections, said he was following common practice and was singled out.

3. DOCUMENT CONTROL

a. Drawing revision control was ineffective.
b. Pipe and pipe supports were assembled using the wrong materials after the identification numbers were ground out and rescribed.
c. Blueprints were not updated, workers in the document control department were untrained, did not know how to read blueprints, and put incorrect numbers on blueprints.
d. Blueprints were destroyed in the blueprint room.
e. There was massive destruction and theft of documents during the 1984 reduction in force according to a former United Engineers and Constructors manager.
f. Document traceability was a problem, and materials could not be traced back to the vendors according to a QA inspector.

4. DESIGN CONTROL

a. Tracking of blueprints was impossible.
b. The control building air handling equipment lacks separation, thus could fail at the same time.
c. The emergency feedwater system is supplied from a single tank which also serves as condensate storage for the main steam feedwater system. In an emergency an adequate supply of water to the reactor cannot be guaranteed since a dual system is supplied from one source.
d. Blueprints were frequently incorrect and were very difficult to interpret.
e. Blueprints do not match the as-built plant.
f. There were an exceptionally large number of "accept as is" engineering dispositions toward the end of construction, changing the plant's design to what had been built. This was done to save time and money rather than for safety reasons.
g. Large numbers of nonconformance reports were voided when procedures were changed to accept the nonconforming condition.
h. Equipment was renumbered so it appears to conform to specifications.
i. The four primary cooling pumps were not installed according to design, possibly causing stress on the welds at the reactor and the pumps, and premature bearing wear.

5. POOR TRAINING

a. Technical training records do not exist prior to April 1985, preventing assessment and verification of training. Some people were untrained, some were retrained.
b. Procedures and instructions, a primary training tool, were written in ambiguous languange.
c. Some welders were trained on the spot; some were improperly trained.
d. Some electricians were improperly trained.

e. Training classes were inadequate to the needs of those being trained.
f. There was cheating on tests several years ago, and a recent NRC report mentioned a current cheating problem.
g. Prohibited work practices like cold pulling and incorrect weld identification were used throughout the plant.

6. ADDITIONAL ISSUES
a. Two issues raised since April, 1987, which have not received a response from the NRC: a crack in the core barrel, and falsification by a vendor of certification required from the manufacturer.
b. Ongoing problems like the cracks in the equipment vault, the PAB, and other structures which are leaking water, and like the chronic equipment breakdowns, are much less likely to be repaired expeditiously since the plant owners are constantly on the brink of bankruptcy.
c. Cold pulling.
d. The 100 bad welds in the service water system are of concern due to the possible effect of MIC, and the current problem of flaking joints in this system.
e. There are a number of issues mentioned in current NRC reports which substantiate problems raised in the past by the ELP but which have been treated as isolated instances by the NRC.

Exhibit A
NC 12-29-87

Employee's Legal Project
P.O. Box 633
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MEETING BETWEEN THE EMPLOYEE'S LEGAL PROJECT AND THE NRC
KING OF PRUSSIA, PENNSYLVANIA
DECEMBER 29, 1987

PROPOSED AGENDA

1. INTRODUCTION: This meeting's purpose is to discuss "procedural problems" at Seabrook Station, raised by the Employee's Legal Project (ELP) in September 1986 and thereafter, and not yet addressed by the NRC. These include evidence of breakdowns in quality assurance/quality control (QA/QC), design control, document control, poor training, and the utility's ongoing inability to deal with these problems. Numerous former Seabrook Station employees have raised these concerns, and utility and NRC reports substantiate them. A breakdown of these programs, designed to ensure safe construction of the plant, means the plant has many underlying technical problems.

   The ELP provides confidentiality and legal protection to nuclear plant employees who have chosen to come forward with concerns about plant safety. Former Seabrook Station employees have brought these issues to the attention of the ELP, at what they consider to be some risk to themselves, because they believe the plant is unsafe. The ELP has a dual responsibility to these individuals: to protect their identities, and to ensure these problems are investigated and resolved. This organization also extends an offer of protection to members of the NRC who have similar concerns.

2. QUALITY ASSURANCE/QUALITY CONTROL
   a. Various sorts of debris were discarded in containment concrete.
   b. Some welds were never tested.
   c. Painters did quality control checks of other painter's work. A recent NRC report shows there is peeling paint in containment areas where the QA program was relaxed
   d. People reporting safety problems suffered harassment/dismissal.
   e. Start-up checkoffs were done carelessly.
   f. When construction procedures were violated, procedures were rewritten to allow the violations to stand. Procedures were implemented to eliminate inspection tests.
   g. During the last few years of construction, there was no quality assurance on third shift, and none for concrete on second shift.
   h. The reactor was filthy; general practices were slovenly.
   i. Dravo shop welds in the turbine building were defective and uncorrected.
   j. Weld inspections were inadequate; welds weren't properly identified; welds were performed incorrectly.
   k. Pipes were forced into place using comealongs and sledgehammers, violating procedure.
   l. A quality assurance person in charge of inspecting cadwelds in containment consistently reported incorrect figures.
   m. Concrete was poured when the temperature was too low, creating cold seams.
   n. There is exposed rebar in the cooling tunnels, and there are voids in the tunnel's concrete.
   o. There was a lack of weld safety and people were harassed if they raised

safety problems according to a QA engineer.

p. People were hired to inspect work they had previously performed according to a different QA engineer.
q. Welds were improperly certified and quality assurance was poor according to a third QA engineer.
r. A weld rejected by an inspector was penciled in with graphite, and then passed inspection.
s. Several weld inspectors, commenting on James Padavano's conviction for falsifying weld inspections, said he was following common practice and was singled out.

3. DOCUMENT CONTROL

a. Drawing revision control was ineffective.
b. Pipe and pipe supports were assembled using the wrong materials after the identification numbers were ground out and rescribed.
c. Blueprints were not updated, workers in the document control department were untrained, did not know how to read blueprints, and put incorrect numbers on blueprints.
d. Blueprints were destroyed in the blueprint room.
e. There was massive destruction and theft of documents during the 1984 reduction in force according to a former United Engineers and Constructors manager.
f. Document traceability was a problem, and materials could not be traced back to the vendors according to a QA inspector.

4. DESIGN CONTROL

a. Tracking of blueprints was impossible.
b. The control building air handling equipment lacks separation, thus could fail at the same time.
c. The emergency feedwater system is supplied from a single tank which also serves as condensate storage for the main steam feedwater system. In an emergency an adequate supply of water to the reactor cannot be guaranteed since a dual system is supplied from one source.
d. Blueprints were frequently incorrect and were very difficult to interpret.
e. Blueprints do not match the as-built plant.
f. There were an exceptionally large number of "accept as is" engineering dispositions toward the end of construction, changing the plant's design to what had been built. This was done to save time and money rather than for safety reasons.
g. Large numbers of nonconformance reports were voided when procedures were changed to accept the nonconforming condition.
h. Equipment was renumbered so it appears to conform to specifications.
i. The four primary cooling pumps were not installed according to design, possibly causing stress on the welds at the reactor and the pumps, and premature bearing wear.

5. POOR TRAINING

a. Technical training records do not exist prior to April 1985, preventing assessment and verification of training. Some people were untrained, some were retrained.
b. Procedures and instructions, a primary training tool, were written in ambiguous languange.
c. Some welders were trained on the spot; some were improperly trained.
d. Some electricians were improperly trained.

e. Training classes were inadequate to the needs of those being trained.
f. There was cheating on tests several years ago, and a recent NRC report mentioned a current cheating problem.
g. Prohibited work practices like cold pulling and incorrect weld identification were used throughout the plant.

6. ADDITIONAL ISSUES
a. Two issues raised since April, 1987, which have not received a response from the NRC: a crack in the core barrel, and falsification by a vendor of certification required from the manufacturer.
b. Ongoing problems like the cracks in the equipment vault, the PAB, and other structures which are leaking water, and like the chronic equipment breakdowns, are much less likely to be repaired expeditiously since the plant owners are constantly on the brink of bankruptcy.
c. Cold pulling.
d. The 100 bad welds in the service water system are of concern due to the possible effect of MIC, and the current problem of flaking joints in this system.
e. There are a number of issues mentioned in current NRC reports which substantiate problems raised in the past by the ELP but which have been treated as isolated instances by the NRC.