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NRC/TUGCO MEETING

VOLUME II

AFTERNOON SESSION

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## 1 SECOND DAY, AFTERNOON SECTION

2  
3 June 14, 19854  
5 P R O C E E D I N G S6 MR. NOONAN: I guess we can go ahead now and get  
7 started.8 MR. LEVIN: Okay. This is the third and final  
9 segment of of our presentation. And in this  
10 presentation we plan to address the discipline review  
11 descriptions on the screen. We have an agenda that  
12 shows the mechanical, electric, piping and civil.  
13 However, we're going to slightly reorder that and put  
14 civil second in line, followed by piping and electrical  
15 systems.16 MR. MOLLONSON: I have a -- Jim Mollonson with  
17 Teladyne, and I have a follow-up comment on Mrs. Garde's  
18 comments on keeping -- and I was reserving what I had  
19 written down until such time we review both plans.20 I can see now that perhaps your necessity for an  
21 effective review of that program, I'm going to have to  
22 have some kind of an interface and control document,  
23 naming all the external activities and so forth.24 There's also going to be an exchange, probably with  
25 the external subcontractors on this job, the consultants

1 on this job, of volume of paperwork. I think it's the  
2 responsibilities for the people who will control the  
3 dissemination of that kind of information, should be  
4 defined.

5 In other words, you don't want people coming in and  
6 contacting just anybody and everybody to get what they  
7 need to do the work.

8 Now on site is probably not difficult for the TRT  
9 to do, but people who are remote from site that need  
10 information, just can't call anything yet. They're  
11 going to have to have a designated person.

12 I think perhaps it might be in order also to use  
13 some format for request for information. And I think  
14 concurrently with that document, if you prepare an  
15 interface and control document, it should come out with  
16 the program plan when the program plan goes out for  
17 review. In fact it's almost going to be a necessity.

18 MR. LEVIN: Thank you for that suggestion. I agree  
19 with you.

20 MR. MOLLONSON: Thank you. We --

21 MR. LEVIN: We'll get into the mechanical systems,  
22 review descriptions. This chart shows the program  
23 organization for conducting this review. As I indicated  
24 earlier, Frank Shaffer is leading this effort.

25 I wanted to remind you that the primary emphasis of

1 this review is self-initiated. And it's focused on the  
2 AFW system as a mechanical system.

3 However, there are several other issues that were  
4 derived from items that were brought up through the  
5 independent assessment program that are also included  
6 within the scope of this review. And what I'd like to  
7 do is first start with the discussion of those.

8 First item. And we're using the terminology that  
9 was presented by CYGNA in terms of identifying these  
10 issues so it would be easier for people to identify them  
11 from previous documentation that has been placed on the  
12 record.

13 But the systems temperature issue was derived from  
14 the fact that system temperatures change due to new  
15 information during the design process, related to the  
16 CCW maximum temperature. CYGNA indicated it wasn't  
17 clear that all affected data was evaluated or updated  
18 when this occurred. The project had concluded that  
19 these changes were not significant. Members of the  
20 mechanical systems team concur in this.

21 However, have felt that there was a need to  
22 determine whether or not the same kind of occurrence  
23 could occur elsewhere.

24 Therefore, we will be taking a look at similar  
25 types of changes in temperatures in the AFW system and



1 interfacing systems as a test to see if that same kind  
2 of problem had occurred. Okay.

3 MR. MARINOS: Let me ask a question, Howard. Why  
4 would you just pick up this particular issue and not --  
5 my understanding was that you were going to go through  
6 the water system in totality.

7 MR. LEVIN: Okay. It may not have been clear that  
8 within the context of the mechanical systems evaluation  
9 there are -- a segment of that review is focused at  
10 identified issues, issues that are still -- have been  
11 identified by various other programs. I'm referring to  
12 those right now.

13 In a few moments I'll be getting back to our  
14 self-initiated review, our cut through the system in  
15 general.

16 MR. MARINOS: You're just merely taking advantage  
17 of someone's identification, some issues. But there may  
18 be issues that may be in the component cooling water  
19 systems that CYGNA's review was not significantly  
20 comprehensive to have identified. So what value would  
21 this information give you since it's not going to be  
22 complete?

23 MR. LEVIN: The self-initiated review will provide  
24 that test to see if that same kind of occurrence  
25 occurred in another location.

1 MR. BECK: Angelos, these issues are included  
2 because they have been identified. They must be  
3 resolved. And we want -- SRT wants the third party to  
4 do that, and pass the recommendation for resolution to  
5 the problem. It's for completeness.

6 On the front end, for identified issues, the  
7 self-initiated comprehensive sweep is in addition to  
8 resolution of all these previously identified issues.

9 MR. MARINOS: You're not going to be guided only  
10 from this issue.

11 MR. BECK: No. As a matter of fact, the  
12 methodology applied is ignorant of the fact of these  
13 thing on the table. We have to deal with --

14 MR. LEVIN: In fact, it serves, John, that this  
15 issue, for example, is one that CYGNA felt was closed.

16 In other words, they had evaluated and determined  
17 in this particular occurrence, it was not significant,  
18 okay. We concur with that.

19 Notwithstanding, okay, we felt that we wanted to  
20 include within other reviews, okay, the capability to  
21 see if that confirmed that it didn't occur elsewhere.

22 Many of these other issues, and I think maybe it  
23 serves just to list them and get directly into the  
24 self-initiated.

25 MR. MARINOS: So you have identified the issues

1 that CYGNA -- have been identified?

2 MR. LEVIN: The issues that are outstanding. That  
3 they have indicated in their review list. I'm not sure  
4 of the exact reference --

5 MR. MARINOS: One significant issue that they may  
6 not flag it as an important issue is, that they resolved  
7 it by saying that there was sufficient margin and that  
8 is NPS-8, and that was a significant area that we were,  
9 at least, concerned about. Although, in that particular  
10 system, there was no problem, and has been discussed  
11 earlier. The trends or the consequences and their  
12 consequences may be different for that particular  
13 system.

14 MR. LEVIN: And that's one of the reasons why we  
15 wanted to insure that NPSH is going to be looked at  
16 somewhere else. Because in that case maybe we  
17 weren't -- we didn't have that same --

18 MR. MARINOS: They didn't identify as an issue on  
19 the component cooling water, obviously.

20 MR. LEVIN: We'll be covering that in a few  
21 moments. Next slide, Frank. As I indicated, the  
22 mechanical systems review will focus on the AFW system  
23 as a test. The objectives of this review will be an  
24 evaluation of whether the independent assessment program  
25 issues may occur in another mechanical system. And to

1 determine whether these issues manifest themselves, in  
2 particular, in the AFW system.

3 The AFW system was selected because it is important  
4 to safety. It includes interfaces with both the reactor  
5 vendor, as well as the balance appliant. It has  
6 diversity.

7 And we have both the motor and steam drives for the  
8 pumps, as well as both AC and DC power requirements.  
9 And we have components, inside and outside containment.

10 And I addressed, earlier, how we in fact, we  
11 verified that. In fact, it was a good system to look  
12 at.

13 We plan to review various sources of information  
14 where criteria or commitments have been made as input  
15 into this review. And these typical sources include the  
16 FSAR, other regulatory commitments, the regulatory  
17 guides, branch technical positions and others.  
18 Westinghouse interface criteria, safety evaluation --  
19 supplemental safety evaluation reports, or other codes  
20 and standards.

21 That gets back into my earlier comments on  
22 capturing these things and how we're going to use our  
23 check lists.

24 MR. MARINOS: Do you in this plan, later on,  
25 perhaps, identify areas that the auxiliary water feed

1 system does not contain that may be important to grants  
2 out of the system?

3 MR. LEVIN: I will address --

4 MR. MARINOS: I'm talking about the hydraulic  
5 aspects.

6 MR. LEVIN: In a few minutes, we'll get to the  
7 review scope and matrix. And we could give some  
8 examples of things that we're going to look at elsewhere  
9 for.

10 MR. MARINOS: You do have in that plan?

11 MR. LEVIN: You will see.

12 The typical documents we will be reviewing include  
13 calculations that address flow requirements, condensate  
14 storage requirements, pressure drops and NPSA, system  
15 pressures and temperature, flow diagram, instrument and  
16 control diagram. Single failure/failure modes and  
17 effects evaluation, pipe break and flooding studies and  
18 fire protection evaluations.

19 And I added that these are typical implemented  
20 documents that will be reviewed.

21 MR. SHAO: I don't see any stress calculations.

22 MR. LEVIN: Okay. We will have to get -- these are  
23 typical, Larry. They are included. You will see that  
24 in the matrix that follows. This was going to be a  
25 typical list. I agree they will be included.

1 MR. SHAO: Will include stress calculations?

2 MR. LEVIN: They will. To give you a feeling for  
3 our initial scope and everything -- I want to preface  
4 everything I'm saying, this really applies to this  
5 initial calc. We have identified, specifically, 15 calc  
6 packages. Most of these things were generated in the  
7 1979 to 1984 time frame. 18 specifications and these  
8 things range back to 1975 through 1984.

9 Sixty-seven drawings, none of which were later in  
10 time than 1984. And these specifics items have been  
11 identified for the initial review. We plan to review in  
12 terms of the outputs specifications for the pumps and  
13 drivers, isolation valves, power operator valves.  
14 Drawings for piping, vendor drawings, vendor manuals and  
15 instructions. Then we get --

16 MR. SHAO: Are these active pumps or -- are these  
17 active pumps?

18 MR. LEVIN: Active pumps and valves, yes.  
19 Here's -- this is probably the best representation of  
20 the initial review scope, this matrix.

21 And what we have done is partition the AFW review  
22 areas into certain segments. For example, operating  
23 mode and various activities or items that would be  
24 reviewed there. Operating limits, heat removal  
25 capability, water supplies, component functional



1 requirements. And there we, Larry, we see, you know,  
2 ASME type components there where we're looking at, both  
3 and code consideration, single failure/FMEA.

4 I wanted to point out that the electrical aspects  
5 from the standpoint of power departments and I&C are  
6 dovetailed with the electrical power system review. In  
7 other words, we will look at the power requirements and  
8 the I&C within the system. Take the general  
9 requirements that are being reviewed elsewhere and get  
10 the thread into this system.

11 MR. MARINOS: But electrically you go beyond  
12 this --

13 MR. LEVIN: Martin Jones will be representing that  
14 later on in the presentation.

15 MR. SHAO: On the functional requirements, as I  
16 understand your FSAR, are you assuming normal design  
17 limits? That's how you address that design functional  
18 requirement? Am I right?

19 MR. LEVIN: I'm sure that's the case, in many  
20 cases. I don't know if that's the case all the time.

21 MR. SHAO: I know the valves on the active --  
22 instead of addressing the primary function, you say, for  
23 any kind of plant connection you -- it's treated like a  
24 design limit, and that's how you address a functional  
25 requirement.



1 MR. LEVIN: That's certainly an aspect that we will  
2 be taking a look at.

3 MR. SHAO: You took both active pumps and valves?

4 MR. LEVIN: Yes. From the standpoint of the bases  
5 that are provided for demonstrated compliance with the  
6 code, as well as the bases for demonstrating the  
7 functionability.

8 And if the bases is derived from stress limit  
9 considerations, we will have to take a look at the  
10 particular application to see if that's appropriate. If  
11 that is, in fact, an adequate way of demonstrating  
12 functionability.

13 MR. SHAO: For the mechanical component integrity,  
14 who will be doing the work?

15 MR. LEVIN: In terms of specific individuals --

16 MR. SHAO: I'm not specifying individuals. Which  
17 group?

18 MR. LEVIN: It will be done entirely within the  
19 third party review. We will be involving people like  
20 Everette Rodenball, and people that have had a  
21 significant amount of experience in the ASME  
22 components.

23 And it will essentially be that aspect of that  
24 review, will be managed internally by some of the people  
25 that are involved in the organization I described

1 earlier, in piping and supports area. People are  
2 looking at other ASME components.

3 MR. SHAO: Stone and Webster is not looking at it?

4 MR. LEVIN: Stone and Webster is certainly looking  
5 at pumps and valves from the standpoint of nozzle hose  
6 and items like that. I guess I would -- we will be  
7 addressing that in a few moments. Ed, from Stone and  
8 Webster, will describe exactly the scope of his review.

9 MR. MILHOAN: Excuse me, Howard you're on the slide  
10 about the multiple design or multiple discipline  
11 considerations. Now, for example, on the first bullet,  
12 high energy line breaks, are you saying that you're  
13 going to be able to draw a conclusion on high energy  
14 line breaks by the review of the AFW system?

15 MR. LEVIN: In terms of the initial scope, we're  
16 going to use the AFW as a means of getting --  
17 investigating that particular item. It may, or may not,  
18 be a good system for that.

19 MR. MARINOS: So this is a listing of things you're  
20 going to look at? If it's not in there, you're going to  
21 go someplace else?

22 MR. LEVIN: This is inadequate. For example, if  
23 this is a low usage type of system and it's not really a  
24 good test, maybe that area we have to get --

25 MR. MARINOS: So the message that you convey to us

1 is, this is a listing of significant areas to be  
2 reviewed?

3 MR. LEVIN: That's correct.

4 MR. MARINOS: Whether this system provides that  
5 opportunity, it's immaterial at this point. You're  
6 going to go someplace if it's not in there?

7 MR. LEVIN: That's right. And the process I  
8 described are four phase process, will help make that  
9 judgment. You asked about one example before, something  
10 that's not here, mainstream isolation valve, for  
11 example, an important valve that comes to mind.

12 MR. MARINOS: Seismic two over one. Where would  
13 you have that listed here?

14 MR. LEVIN: That will be covered later on the  
15 seismic interaction question. Yeah. In the civil  
16 structural.

17 MR. HUNTER: Howard Hunter, Region 4. Back on the  
18 first slide for system operating modes. The first item,  
19 startup, shutdown, accident conditions. Looking at  
20 general design criteria and normal, abnormal, and  
21 emergency operations. Is this inclusive of abnormal  
22 operations, abnormal trends on the feed water?

23 In other words, operational trends, and abnormal  
24 trends? In other words, you say accident. And I was  
25 asking what that definition was, startup, shutdown and

1 accident. Would that be inclusive of general design  
2 criteria?

3 MR. LEVIN: Essentially. It includes all modes,  
4 even including station blackout, which is very important  
5 to the system.

6 MR. HUNTER: Okay. Thank you.

7 MR. NOONAN: Howard, if I could touch briefly on  
8 that one, just to follow up a little bit. One of the  
9 draft documents that Don Landers, he was concerned about  
10 the operational -- whether or not, they were adequately  
11 included in design. I guess you're telling me you're  
12 looking at all of that.

13 MR. LEVIN: Okay. I have to differentiate, we're  
14 talking about operational modes, Vince. Don was  
15 concerned about the effects of those transients on the  
16 hardware. And that will be addressed directly by Stone  
17 and Webster. We will be overviewing their activities in  
18 that effort, and you will be hearing more about that  
19 from Ed Siskin in a few moments.

20 MR. NOONAN: I'm looking at -- did their design  
21 consider that?

22 MR. LEVIN: That's correct.

23 MR. NOONAN: It's in there?

24 MR. LEVIN: Yes. We will make that judgment.

25 Okay. With that, we will proceed into the civil

1 structural review area, and that discussion will be led  
2 by Dr. Cris Mortgat.

3 MR. MORTGAT: Design of the -- program is of the  
4 structure, is basically divided into three categories.  
5 I'm sorry. It is the last section of the hand out. The  
6 flow chart organization chart that was about 16 pages  
7 from the end.

8 The effort is basically divided into three  
9 particular areas. One related to cable tray supports.  
10 One related to conduit supports. And the third, and  
11 last one, to self-initiated and TRT related issue.

12 The cable tray support effort will be led by Doctor  
13 Kircher. Doctor Kircher is president of Jack Biggs &  
14 Associates. He got his degree in structural engineering  
15 from Stamford. He is a professional engineer in  
16 California. Has 15 years experience, each of which are  
17 related to nuclear industry.

18 He has an extensive experience in testing which --  
19 all of which the most depicable to his programs are the  
20 Tangor Canyon Raceway program and Sesna 1 electrical  
21 cabinets program.

22 The conduit support effort will be led by myself,  
23 whereas the self-initiated and TRT related issues will  
24 be led by Doctor Arros. Doctor Arros has obtained his  
25 degree in structural engineering from Stamford

1 University. He has eight years of experience, five of  
2 which are related to nuclear industry.

3 MR. SHAO: Is that on this chart?

4 MR. BECK: Right-hand.

5 MR. MORTGAT: Of particular relevance to this  
6 project, Doctor Arros was a principal structural  
7 engineer in the area of reviewing concrete design and  
8 dynamic analyses in the middle IDVP.

9 Both the cable tray effort and the conduit effort  
10 will rely heavily on testing. Testing will be performed  
11 by ANCO engineers under the lead of George Howard.

12 Doctor Howard is a principal of ANCO engineers. He  
13 has a degree in nuclear engineering from UCLA. And  
14 he -- in California. He has 15 years of experience in  
15 nuclear -- in the nuclear industry field, with a lot of  
16 emphasis on research analysis and testing of some --  
17 related to some nuclear facilities all over the world.

18 ANCO is very well known for their work in testing,  
19 which is performed over the last week.

20 MR. SHAO: You look like you have a lot of work on  
21 the cable tray support, but on the other hand, there are  
22 going to be four people working on --

23 MR. MORTGAT: We will be going over it as I go  
24 through it.

25 Finally, the site activities will be reviewed by



1 Mr. White, a graduate from UCLA with a master's in  
2 engineering mechanics. He has 14 years of experience,  
3 eleven out of which are related to nuclear industry.

4 The areas of review can be divided, basically, into  
5 two categories. The area in which issues have been  
6 identified in the past. And other areas in which either  
7 there was no issue identified or where no reviews have  
8 been performed previously.

9 For it to be address in the area where issues have  
10 been identified, basically, the cable tray supports,  
11 conduit supports, the steam generator restraint, which  
12 is derived from the TRT related issue 5B, and the design  
13 of seismic category II items, which is related to the  
14 TRT issue 2D.

15 And the scope of this effort is, basically,  
16 transferred from the TRT action plan, and will be --  
17 will not be addressed in this review.

18 Under the self-initiated issues, we have three  
19 areas where the review of concrete design, steel design,  
20 and the HVAC supports.

21 MR. MOLLONSON: Jim Mollonson. Active organization  
22 chart. I'd like, once again, to point out that it  
23 doesn't define any QA/QC -- in into action on that  
24 chart.

25 MR. MORTGAT: This will, as previously mentioned,



1 this will be handled at a programmatic level.

2 MR. MOLLONSON: Say again, please.

3 MR. MORTGAT: This will be handled at that  
4 programmatic level.

5 MR. MOLLONSON: Yes. We understand that, but you  
6 have got interaction between all these people with  
7 QA/QC, and I think that should be shown. I have made  
8 the same comment, I believe, on all of the other  
9 organization charts. It's the same comment.

10 MR. BECK: Your point is taken.

11 MR. MOLLONSON: Thank you.

12 MR. SHAO: Let me ask the question. You have  
13 concrete designs, steel design, HVAC supports. Why  
14 don't you say supports? Why you pick HVAC?

15 MR. MORTGAT: As we go through presentation, I'll  
16 explain that. We pick HVAC supports, because there is  
17 some similarity between the hardware of the HVAC support  
18 and the one that was used in the cable tray.

19 The HVAC support area is part of the Comanche Peak,  
20 of the civil, structural, or the mechanical. However,  
21 we decided to increase the scope of the review to see if  
22 some of the issues that have been raised into the cable  
23 tray area were also present.

24 MR. SHAO: But why not other supports?

25 MR. MORTGAT: Well, basically, this is an initial

1 scope. And this effort is -- we had reason to do it,  
2 the HVAC, because we had a lead in terms of similarity.

3 MR. SHAO: Yeah, but the HVAC supports aren't  
4 known, insures something, like identified issues. The  
5 reason you picked this one, is this one like cable tray  
6 support?

7 MR. MORTGAT: No. Issues have been identified  
8 within the HVAC area. It is just based on the  
9 similarity of cable tray.

10 MR. SHAO: I was just marking the suggestion that  
11 you should include supports, just the supports.

12 MR. CALVO: I guess it goes back to the basic  
13 philosophy that you had adapted. You selected a  
14 facility fuel water system. You're hoping that a  
15 facility water system will give you enough depth and  
16 breadth that you will have covered most of the areas on  
17 the plant.

18 On most areas that you will be missing, you will be  
19 supplementing it by the small vertical slides. And I  
20 guess that falls within this area.

21 MR. LEVIN: That's true, Jose. We have to take a  
22 step back and look at -- we have looked at, for example,  
23 piping supports are a major part of this program. HV --  
24 I mean cable tray and conduit supports, are a major part  
25 of the program. HVAC, we don't have any, to our

1 knowledge, of any problems. However, we're going to  
2 take a look.

3 Larry, we're taking a look at the steam generator,  
4 upper and lower lateral supports. There, in fact, may  
5 be other supports in the plants. I think what we need  
6 to determine is whether or not there's some common  
7 and/or, let's say some commonalities, that we're not  
8 touching, some areas that we're not touching. And that  
9 will occur Jose in phase 3.

10 MR. SHAO: The reason I asked this question, is we  
11 look at a cable tray support we have some problem. We  
12 look at a conduit with some problem. We look at a pipe  
13 support with some problem. That's why I want to have  
14 other supports to make sure other supports are no  
15 problem.

16 MR. MORTGAT: The point is well taken. Yes. Since  
17 the standards of review within those three areas are  
18 significantly different, the approach followed by the  
19 program might be different as well. For example, in the  
20 cable tray and conduit support area, there has been an  
21 extensive review, and some generic issues have been  
22 identified. And considering the amount of review, there  
23 is a low probability that additional issue will be  
24 identified.

25 And, therefore, the emphasis of the program is to

1 answer the concerns in the comprehensive manner, whereas  
2 in other areas, where the amount of review is either  
3 much smaller or isn't in existence, the emphasis of  
4 the program is to organize a plan in such a way that  
5 significant and important issues are being identified.

6 And this is being done through the use of  
7 sampling. And the sample can either be taken on a  
8 random base or based on a generating judgment. This is  
9 just to define the different philosophy between the  
10 different areas of the program.

11 Starting with the cable tray and conduit supports,  
12 and just a few words about the general philosophy of  
13 design, as it was intended by Gibbs & Hill, the support  
14 work design, as acting in the path of each other, and  
15 therefore no system approach being taken. The supports  
16 could either be not included in all transfers or three  
17 directional.

18 Two types of supports were involved in the design.  
19 They were either, generate supports, and their intent  
20 was to use the enveloping spectra, or all the floors and  
21 all the buildings. And use the maximum load on the  
22 trays or the conduits.

23 The other type of supports were either the special  
24 or specific supports. And in that case those supports  
25 were designed for specific location. The cases for

1 building and usually for the actual load. Therefore  
2 -- this specific support might have less margin.

3 So based on such design philosophy, the system  
4 should be fairly conservative. However, there has been  
5 a number of systems that have been raised that would  
6 decrease at the conservative.

7 And therefore we're faced with a set of systems,  
8 which on one hand have been designed with some  
9 conservative in mind. And on the other hand, some  
10 issues concerns have been raised by decrease  
11 conservative.

12 MR. SHAO: Back to the support again. Did you have  
13 a request to use the latest ASME code Section NF, this  
14 component support? When you do the review, are you  
15 going to use the latest ASME code, or are you use a code  
16 you committed FSAR?

17 MR. LEVIN: Larry, these cable tray supports are  
18 not ASME supports.

19 MR. SHAO: I'm talking support in general.

20 MR. LEVIN: Well, where they're ASME supports, for  
21 example, Ed Siskin will be addressing those. The answer  
22 most definitely is that the --

23 MR. SHAO: But I think Ed is going to talk about  
24 pipe support. I'm talking about component support in  
25 general.

1 MR. LEVIN: Like I said, these aren't within the  
2 ASME scope. They're not governed by --

3 MR. SHAO: This -- the support area -- HVAC 49,  
4 ASME NF, I mean, I just want to know is, when you talk  
5 about supports, are you using HVAC 49 NF? I'm not not  
6 speaking of pipe supports. I'm speaking of supports in  
7 general.

8 MR. LEVIN: The yardstick that we use, Larry, in  
9 terms of making the initial comparisons in degrees of  
10 compliance, will be the commitment made by the project.  
11 In the case of cable trays and supports, for example, in  
12 terms of acceptance criteria, it's with the American  
13 Institute of Steel Construction Code. Along with that  
14 are various other kinds of commitments that are related  
15 to the development of the loads and assumptions used in  
16 the dynamic analysis. But the benchmark, if you will,  
17 are the commitments made by TUGCO.

18 MR. SHAO: One thing I'm not very clear, to me.  
19 When you say you want to use the latest ASME code NF, is  
20 that only for pipe supports or for all component  
21 supports? Or when you use this latest NF, are they  
22 going to mesh with the new ACI 349? Or mesh with the  
23 whole HC 349 for the accomplishing of it? What's the  
24 thinking behind the whole supports now?

25 MR. LEVIN: Okay. If there's new thinking, I guess



1 I'd like to -- I'm not totally sure what you're  
2 referring to to --

3 MR. SHAO: When you support -- when you have  
4 component first, you have NF. The NF go through another  
5 support, concrete supports ACR 349. So when you do  
6 support, you have to use two codes. One is ASME code  
7 and also ACR code.

8 When you change, you say, use the latest addendum,  
9 use latest code. And how are going to mesh the concrete  
10 and the steel? And when you say you want to request,  
11 you using only for the supports or for all component  
12 supports?

13 MR. LEVIN: Larry, I'm not familiar with any latest  
14 requests. This is an NF plan. I guess I would have to  
15 defer that to --

16 MR. SHAO: Maybe somebody can answer that  
17 question. Somebody use the latest NF?

18 MR. LEVIN: I'm not sure that we can answer that  
19 correctly.

20 MR. CALVO: I guess, you know, which of the  
21 criteria you can document in the FSAR. And you're going  
22 to --

23 MR. SHAO: No, no. They want to use something  
24 other than the FSAR.

25 MR. LEVIN: We'll have to get to you, Larry.



1 Certainly our benchmark has been with the commitments.  
2 Were -- if it was some request that would have to be  
3 factored the request for --

4 MR. BOSNAK: What Larry was getting at, there's  
5 been a request to use portions of a later edition and  
6 addendum. And that's kind of a separate thing I would  
7 look at. From what you're doing here, you're looking at  
8 the basic commitments. Eventually, I guess it will have  
9 to be reconciled.

10 MR. BECK: Yes. Thank you.

11 MR. MORTGAT: To answer the concerns raised on the  
12 cable tray and conduit supports, our general plan was --  
13 to either confirm that the existing supports have  
14 sufficient margin. Or that would modify the specific  
15 supports or support type.

16 And if we go to the next slide, which is somewhat  
17 of a flow chart, describes how the approaches are being  
18 followed. We are dealing here with two pilot  
19 approaches.

20 One describes at the top of the chart, and one at  
21 the bottom of the chart. And those approaches will run  
22 on the part of the trite, and will interact through the  
23 dotted line on the map.

24 The dump part is really, it will field activity.  
25 They were basically dealing with other, defying critical

1 components. And they're looking at designing a direct  
2 modification that would directly answer all the concerns  
3 that have been raised to building those supports, both  
4 in the conduit, and the cable tray.

5 This effort could be followed by as built effort  
6 either consists of hundred percent of building of what  
7 is in the field. Or a population survey will determine  
8 on the less detailed, minor, what is in the tray.

9 As the as built goes on, some direct modification  
10 may be implemented, related to the most critical  
11 component that have been identified. As this effort  
12 goes on, it will receive input from the bottom part of  
13 the chart, which is a confirmatory effort, based on  
14 testing and analysis. Both effort are going to start at  
15 the same time, and will interact and provide input from  
16 each other.

17 The confirmatory effort, which is based on testing  
18 and analysis, is devised to take modeling techniques to  
19 assess the adequacy of the systems and determine what  
20 type of modifications are necessary for this -- the  
21 effort is not going to be based on the hundred percent  
22 verification, but rather on the analysis of sample of  
23 runs. And those are shown on the second parts, doing  
24 the as built effort.

25 Two samples of runs would be identified. One, the

1 engineering sample, which is based on engineering  
2 criteria, which are expected to provide systems that  
3 respond in the less favorable manner. And another set  
4 of samples which would be random. And we therefore  
5 present our population.

6 The analysis of those two sets, the first one will  
7 be, first, the engineering sample to identify the  
8 critical elements, and therefore provide input to the  
9 field activity in terms of what type of modifications  
10 should be performed. Either increase the level of  
11 modifications as being performed of the function, of the  
12 type of results we're getting.

13 And the random sample will be realized afterwards,  
14 to confirm the adequacy of decisions that have been made  
15 in terms of the modification. If we go to the bottom  
16 part of the chart --

17 MR. SHAO: Do we know the root cause of the  
18 previous problem that was identified in this area? What  
19 was the cause of the problem?

20 MR. MORTGAT: You mean the type of --

21 MR. SHAO: Yeah. Why there is such deficiency in  
22 the cable system?

23 MR. MORTGAT: At this time, we have not defined  
24 what the root cause was. We know what the issues are  
25 and how they affect the response of the system and their

1 behavior.

2 MR. SHAO: Is it better to know the root cause and  
3 you can use your program to fix the --

4 MR. MORTGAT: Following this program -- through the  
5 application of this program, we will be able to learn a  
6 lot about the root cause, because we're going to learn a  
7 lot more about the behavior of those systems and what we  
8 have in the field, than we do today.

9 So the root cause would be a result of the  
10 execution of this program.

11 MR. SHAO: What was the FSAR commitment on cable  
12 tray support SSER? What --

13 MR. MORTGAT: Yeah.

14 MR. SHAO: ASME allowance.

15 MR. MORTGAT: The bottom part, which is a  
16 confirmatory effort, consists of three main plans.

17 One is a derivative of identical matters and  
18 modeling techniques.

19 The second one is the selection of design loads.

20 And the third one, development of acceptance  
21 criteria that are shown in these other boxes, on the  
22 left.

23 Testing is going to be an important part of this  
24 effort. Testing will be applied on three levels. It  
25 will not be a testing to qualify either systems or

1 supports. It will be testing to understand the  
2 behavior, or components, or some other components that  
3 have been questioned in terms of their modeling or their  
4 behavior.

5 And the second level of testing at the higher level  
6 where some representative number of supports will be  
7 tested as units.

8 And finally some system testing these are testing  
9 in the field or in the lab. The idea through this  
10 effort is to understand the behavior of the elements in  
11 such a way that the modeling techniques will be used.  
12 Rest on enough justification --

13 MR. NOONAN: Let me ask a question on that. What  
14 is your definition of acceptable for cables? In the  
15 testing areas, what is going to be the criteria? What  
16 is acceptable?

17 MR. MORTGAT: At this time, what we'll use the  
18 testing for, is to understand the behavior. For  
19 example, the connection, one and two bolt connection,  
20 which lots of questions have been asked about.

21 Or the behavior of the clamps. There have been  
22 lots of questions asked about the low transfer between  
23 the trends and the support, or the conduit and the  
24 support.

25 So these have been made about those problems. So

1 all of them are based on the -- what we want to do is  
2 test some of those components to see what is the  
3 physical behavior of those systems. And therefore in  
4 the article two, to come up with --

5 MR. NOONAN: Previous to analytical reports?

6 MR. CHANDLER: Let me pick up on Vince's question.  
7 Maybe it will clarify it maybe it will confuse it. Let  
8 me give it a shot. You reach a conclusion of  
9 acceptability --

10 MR. MORTGAT: I would define it -- I have not  
11 defined what acceptability would be at this time. At  
12 this time the testing is only directed --

13 MR. CHANDLER: Well, I'm looking at your chart.  
14 Look at your chart for a moment. You're determining, at  
15 least on line one, based on testing, and you're reaching  
16 a conclusion of acceptability and nonacceptability.  
17 What are you judging acceptability on at that point?

18 MR. MORTGAT: At that point, the acceptability is  
19 the capability of our models, our tools to present the  
20 behavior of the systems in the field.

21 MR. CHANDLER: Not the acceptability of the system  
22 itself?

23 MR. MORTGAT: The -- no. It is to be presented for  
24 the behavior of the systems. That's why this comes  
25 before any analysis. We're going to look at either



1 different techniques, and determine whether those are  
2 applicable to represent the behavior of the systems.

3 MR. CHANDLER: Vince, did that help you or confuse  
4 it?

5 MR. NOONAN: I guess I'm looking at that first  
6 little box of testing, Howard. It looks like you say  
7 acceptable, yes or no. And you go to modifications,  
8 what kind of modifications, based on what criteria?

9 MR. LEVIN: Maybe I can differentiate these tests.  
10 Are not, for example, the same kind of tests you might  
11 do -- let's say we're doing a qualification of  
12 component. We're putting out on the shake table. And  
13 we're going to put in its design basis input for that  
14 item, and shake it, and see that it still performs, and  
15 all those things that go along with the qualifications  
16 test.

17 What we're trying to do is develop a technique that  
18 can be applied on a statistical basis for the evaluation  
19 of the entire population of cable tray systems. Now  
20 what one could do is, let's say we could randomly select  
21 some systems in the plant to analyze them.

22 And on the basis of that, in the course of which it  
23 is structured, and the way the results could be  
24 evaluated in a statistical sense, that will be fine.  
25 The role of the testing is to justify those analytical



1 techniques.

2 The nature of the problems here are such that a  
3 fair amount of discussion has occurred in the past  
4 several months between TUGCO and the independent  
5 assessment program personnel, where things aren't so  
6 straightforward that we can just go and directly analyze  
7 these systems. Okay.

8 We need some information to help us do that, number  
9 one.

10 And, number two, to provide justification for those  
11 approaches. The goal is to use the testing to justify  
12 development of the models. And we're hoping to develop  
13 those models in such a way that they can be executed on  
14 a broader scale, as opposed to having to be too detailed  
15 or too sophisticated, not being able to because of  
16 impracticality implemented in a broad sense.

17 MR. NOONAN: Let me just ask one question. You say  
18 identify modifications on that chart. What  
19 modifications? Modifications of your models?

20 MR. LEVIN: No. In this case, what we're saying,  
21 as a result of the testing, we may identify the  
22 particular components that exhibit lower bound behavior,  
23 such that, you know, it really doesn't make sense to  
24 factor that information, and to try to deal with that  
25 problem in the analytical model.

1           In other words, if there's lower bound equipment  
2           there, or components, the approach might be just go and  
3           directly seek those items out in the population, and fix  
4           them. In fact, that is the essence of the original  
5           approach, that the approach would be to identify those  
6           lower bound items, go out and fix them directly. Okay.

7           Then take a look at that system, okay, with those  
8           modifications made, and utilize this program,  
9           statistically based program of evaluation, to confirm  
10          that that modified system now behaves in a way that  
11          meets its functional requirements.

12          MR. CHANDLER: Howard, where does it get plugged  
13          back in, though, if you have gone through on your flow  
14          chart, you have gone to your testing. You get to the  
15          point of acceptability, you then say. Now you then  
16          suggested that there might be modification to the  
17          system, and you leave it off at that point. Do you  
18          bring it back in, as I think I understood you to say, in  
19          the analysis, the box ends at that point?

20          MR. MORTGAT: Yes. That provides an input on what  
21          is going on at the upper level through the dotted line,  
22          the fields activity. Basically those two plans are  
23          provided -- to provide information from the top -- from  
24          the bottom to the top.

25          So if through the testing program we see that some

1 of the components that we thought would be behaving some  
2 way or another, and we don't know up to now, because  
3 none of those have been tested, do not perform the way  
4 we thought could, they will go up there and through the  
5 modification program and --

6 MR. CHANDLER: Let me ask one other point. If I  
7 now follow through that same line, testing is  
8 acceptable.

9 We now go into analysis. On that same line, a  
10 third possible input is from the last line of your  
11 chart, which is acceptance criteria development.

12 I guess it's not clear to me why the acceptance  
13 criteria development would await completion of analysis  
14 as opposed to preceding analysis. In other words, what  
15 are you judging acceptability of analysis on --

16 MR. MORTGAT: At the beginning, when we go through  
17 testing and the remodeling techniques we have, not look  
18 at any systems yet, we are just -- two -- the testing  
19 shows us that our modeling techniques are not  
20 applicable. We cannot match those systems, we will have  
21 to stop there the -- for having a hundred percent, no.  
22 At the first is not acceptable, which means we cannot  
23 model those systems.

24 MR. BOSNAK: This morning I scratched in Abasco  
25 with a dotted line going in to Cris Mortgat. Now how

1 are they going to do their own testing, or what's going  
2 to happen? I scratched in Abasco here on this morning's  
3 chart, flow chart, saying that Abasco is going to be  
4 doing all the table tray, conduit supports.

5 MR. MORTGAT: Yes. Above the dotted line, all the  
6 work is being performed, this dotted line.

7 MR. BOSNAK: Well, suppose they don't go along with  
8 your testing. Suppose they're going to go in and do the  
9 whole thing over again. Maybe I'm -- supposing that  
10 something isn't going to happen.

11 MR. SHAO: This is -- above the dotted line is  
12 Abasco, and below is another, for the same subject.

13 MR. MORTGAT: That's correct.

14 MR. NOONAN: Howard, I don't think we're  
15 communicating on this. I'm not going to take the time  
16 to get into more detail, but I think we need to discuss  
17 this further. I don't understand it.

18 MR. LEVIN: Yes. I guess, Vince, it's my feeling  
19 that given the nature of this whole activity, and Cris  
20 has summarized particularly the testing program very  
21 briefly. And it's a fairly comprehensive effort, as  
22 well as the Abasco effort. And I think that there's  
23 probably a need that, for example, prior to even  
24 embarking on that program, that, you know, it's in the  
25 early stages of development right now, that there be

1 discussions to insure that you're on board, and you do  
2 understand that and it's communicated adequately.

3 MR. SHAO: Well, what are -- within the  
4 organization to do? Why the --

5 MR. MORTGAT: What activities are field activity  
6 which involves direct modification, total building of  
7 the whole population of cable trays and conduit? And if  
8 other one is of testing and -- testing and analytical  
9 effort, conservative. What is going on.

10 MR. SHAO: Now we're going to have two groups to  
11 look at. All confused.

12 MR. BOSNAK: What Stone and Webster will be doing  
13 in their area is different than what Abasco will be  
14 doing in their area. I guess I didn't understand that  
15 this morning either.

16 MR. MORTGAT: Yes. Because the feel is that if we  
17 understand the behavior of some of the components which  
18 are really critical in the concerns that have been  
19 raised through the review process, and those -- some of  
20 them are rather simple to understand. The one and two  
21 board connection behavior. The friction of the plant.

22 If we assume that those behave a hundred percent  
23 theoretically, then we have to go with the top program.  
24 However, if through testing we can understand what the  
25 real behavior of the elements are, all the justification



1 will be needed to solve all the problems directly. With  
2 that, testing may not be required.

3 MR. BOSNAK: I understand what you're saying Cris.  
4 But, I guess, I assume that Stone and Webster was doing  
5 all the piping, as Abasco was going to be doing all of  
6 the cable tray and conduit supports.

7 MR. LEVIN: The analogies are the same. Stone and  
8 Webster is doing, as you indicated, the piping from the  
9 standpoint of those design basis activities. The same  
10 holds for Abasco and these cable tray activities. But  
11 we're talking about performing direct modifications.  
12 That is a project activity, and they are doing that in  
13 both cases in the piping area.

14 The third party is involved in overseeing that  
15 work. And in an analgous sense, third party is involved  
16 here in doing a confirmatory evaluation of the adequacy  
17 of that work. So the parallels are the same.

18 MR. BOSNAK: But who identifies the -- well, the  
19 problems -- some of them have been identified. Maybe  
20 some of them have not been, but the corrective action to  
21 solve the problems is that a third party group, or is it  
22 the other contractors who will be reporting to the  
23 projects?

24 MR. LEVIN: Abasco, in this case, would identify  
25 those direct modifications, conduct design activities,



1 required for those modifications, and --

2 MR. SHAO: Yeah, but this diagram here, Abasco only  
3 have field. They don't do any analysis.

4 MR. LEVIN: Well, that may not be clear, but they  
5 do have to do analysis.

6 MR. SHAO: Here it just says field, and then  
7 testing analysis is done by someone else.

8 MR. LEVIN: What we're talking about here is --  
9 well, if you see below the dotted line is  
10 confirmatory. There is analysis associated above the  
11 dotted line, Larry, and that is design basis.

12 MR. NOONAN: I tell you what, why don't we just  
13 leave it? We'll be on the record we don't understand  
14 it, and hope we will see a program.

15 MR. SHAO: I would like to see one group.

16 MR. LEVIN: And we will be glad to discuss this  
17 program and testing program in more detail.

18 MR. MORTGAT: I guess we can take the next slide.

19 The following item is a TRT related issue which  
20 was -- this steam generator -- steam generator  
21 restraint. This issue was identified by TRT as an issue  
22 5B, which was the approach shortening of the upper  
23 lateral bolts.

24 THE REPORTER: And the what?

25 MR. MORTGAT: Upper lateral bolts. Upper lateral

1 restraint bolts.

2 During the performance of the action plan related  
3 to that TRT issue, it was noticed that some of the bolts  
4 were in fact shorter.

5 MR. SHAO: This we have discussed last time. Can  
6 we skip that?

7 MR. MORTGAT: So that's really the self-initiated  
8 evaluation.

9 MR. SHAO: One thing, I would like you to talk a  
10 little bit on this seismic CAT -- two --

11 MR. MORTGAT: This is exactly the same program that  
12 was presented.

13 MR. NOONAN: Let me correct the record by reading  
14 this thing. The reason we're -- for going into this  
15 discussion, it's going to take place after the February,  
16 March time frame in those transcripts.

17 MR. LEVIN: Vince, I think I alluded to it  
18 earlier. These items, the TRT issues that have design  
19 related implications, have been folded into this program  
20 so that we maintain an overview of that.

21 I wanted to indicate though, Larry, that there's a,  
22 particularly with regard to upper lateral restraint  
23 issue, the depth of that review has increased. Okay.

24 So it's -- in the case of the category two items,  
25 it's exactly as you understand it. It's been

1 programmatically transferred, steam generator upper  
2 lateral, taking a look at a few more issues. And that  
3 will be defined in the program.

4 MR. MORTGAT: Under this self-initiated programs,  
5 the reason for generating those programs was to expand  
6 the scope, provide a more complete coverage of the civil  
7 structural design. And also to focus on other areas of  
8 SAFE team which had not been reviewed.

9 The typical type of review that would be performed  
10 will be to look at the loads and the load combinations,  
11 the model, and the boundary conditions, the computer  
12 codes used for the analysis and design, the design  
13 procedures, and the acceptance criteria. And this would  
14 apply to the three areas I will be describing later on  
15 with some foundation.

16 In the area of design concrete, the initial scope  
17 of review has selected three buildings, one being the  
18 containment, and the other one being -- the two other  
19 ones being the auxiliary building, and the fuel  
20 building.

21 Within the containment, four areas will be  
22 reviewed. A section of the shed wall, and the areas  
23 with the distance between them. Basically the  
24 penetration area; wall dome interface; and the wall  
25 foundation.

1           Within the auxiliary building and fuel building,  
2           five slabs and five wall calculation piping will be  
3           selected randomly and reviewed. And after that, another  
4           ten additional calculation packages will be selected,  
5           either randomly, or based on any finding from  
6           previously --

7           MR. SHAO: Okay. When you pick these items, do you  
8           have the age -- not only age in mind, but the cutoff of  
9           the major organization?

10          MR. MORTGAT: In this case they --

11          MR. SHAO: I don't know what is the correlation at  
12          Gibbs & Hill, who did design the concrete structure. Do  
13          they have different groups or one group or --

14          MR. MORTGAT: Well, these items would be taken into  
15          consideration and reviewed. As we go through the  
16          reprocess of reviewing the calculations, we follow the  
17          process of where the load came from or who generated  
18          that.

19          MR. SHAO: What I said, just look at the original  
20          organization is how the work is done. So that you  
21          should pick the area in such a way you cover all  
22          organizations.

23          MR. MORTGAT: Yes, that's right. And the fact that  
24          the samples are being randomly, should provide that type  
25          of --

1 MR. CALVO: Not necessarily. All right. You can  
2 miss all organizations. There's too many  
3 organizations. I think you should consider all the  
4 organizations, and within your organizations, random  
5 samples.

6 MR. MORTGAT: I agree with you. This is an  
7 initial -- yes. In the area of steel design, again, the  
8 initial scope would be to select two sections of the  
9 structural steel frame in the cable spreading room.  
10 This is the only major structural structure in the whole  
11 plant.

12 So two sections of that frame will be selected for  
13 review. And then upper ten structural steel components  
14 and some supports will be included in the sample as we  
15 brought up before.

16 MR. SHAO: I have the same comment for structural  
17 two steel, also. The major organizations, I don't know  
18 how they're organized.

19 MR. MORTGAT: Well, this will be included in the  
20 process of review. This will be taken into the process  
21 of review for consideration. Finally, the HVAC support  
22 area, and we talked about that a little bit before we  
23 selected.

24 Because there was some similarities between those  
25 supports and the cable tray supports, even though they

1 were not designed by the same organization, and they  
2 weren't underlined by the same organization, either.  
3 But some of the hardware are similar on the one that  
4 is --

5 MR. SHAO: But my bottom line, eventually, is you  
6 say all supports are okay. So I think you have to  
7 explain your scope here, issue all the supports in this  
8 plant are okay.

9 MR. CALVO: Or accomplish commonology for the ones  
10 that you selected. Okay.

11 MR. MORTGAT: Yes. That is the end of the review.

12 MR. LEVIN: Okay. I believe we're ready to  
13 proceed. The next segment of our presentation will be a  
14 description of the piping and supports program.

15 In the way of introduction, many of you who have  
16 participated in yesterday's presentation already  
17 understand that TUGCO has made a decision to perform a  
18 reanalysis of a portion of the piping. And this  
19 reanalysis will ultimately become the analysis of  
20 record.

21 Stone and Webster has been retained to conduct this  
22 work. And to describe that program would be Ed Siskin.  
23 I want to emphasize that the Stone and Webster efforts  
24 will be subject to a third party overview.

25 And after Ed finishes his presentation, I will



1 describe that overview, including some of our  
2 interfaces.

3 With that, I'd like to introduce Ed Siskin from  
4 Stone and Webster.

5 MR. NOONAN: Ed, before you start on your  
6 presentation, staff is interested in finding out what  
7 Stone and Webster is doing, their roles in this effort.

8 Mrs. Ellis from CASE has provided some questions  
9 she would like to be answered by Stone and Webster. I  
10 gave you a copy of those a few minutes ago. I would  
11 like to make sure we don't miss anything here.

12 Maybe at the end of your presentation you could  
13 summarize these questions.

14 MR. SISKIN: Okay. Vince, I will do that, although  
15 I think some of the questions will be discussed in the  
16 presentation. I will go back over those specific items  
17 when we're done. I trust you will bear with me while I  
18 stand. Two advantages, one, my back is really achy from  
19 all this sitting. And second, I will have that  
20 incentive to be precise and brief. Okay.

21 Why don't you put on the first slide? Change  
22 colors, too. Basically, that concisely says what TUGCO  
23 has asked us to do. It's our intent to go through and  
24 qualify all as ASME class 2 and class 3 piping, systems,  
25 and supports, in accordance with procedures that meet

1 our standards, and all FSAR and other requirements.  
2 It's a complete integrated requalification.

3 MR. BOSNAK: Ed, on the scope of the question,  
4 maybe should go to John Beck, who is taking care of  
5 class 1.

6 MR. SISKIN: Let me mention what's going to happen  
7 with class 1 as I go through the presentation. A little  
8 more description on the scope. First, what we intend to  
9 do with regard to this effort.

10 First, we're going to do a hundred percent of all  
11 class 2 and class 3 pipe large conduits, the large.

12 We're going to do a hundred percent of all the  
13 large bore supports, including those for class 1. We're  
14 doing a reanalysis of the small bore.

15 MR. SHAO: Wait a minute. You say large bore means  
16 two inches or four inches?

17 MR. SISKIN: Above two inches is large. Two inches  
18 and below is what we understand to be defined as small  
19 bore on this plan. Obviously, every plan it's something  
20 different.

21 On the small bore, we have a situation that is very  
22 similar to the situation that Doctor Abatee of Abasco  
23 faces. We are going to do a sampling basis to verify  
24 adequacy. That may end up to be a hundred percent  
25 sample, but we will do enough analysis there to be able

1 to have Stone and Webster stand behind the design and  
2 the installation of that work.

3 MR. SHAO: Some of the allegations, some of the  
4 supports cannot be analyzed. What do you do with these  
5 kind of supports?

6 MR. SISKIN: Obviously, we have standards, if we  
7 can't analyze them, the support would have to be  
8 changed.

9 MR. SHAO: Are you going to have to change it  
10 first, and analyze it, and then change it?

11 MR. SISKIN: Let me get back to that one in a few  
12 minutes, because there are some supports that are going  
13 to be changed and can be analyzed. And may very well be  
14 okay. But are going to be changed for expediency. And  
15 I'll get that to in a few minutes.

16 We're also going to try to, or we also intend to  
17 try to, verify all structural and system inputs, to  
18 insure complete integrity of the piping and support  
19 process.

20 Now what I mean by that, and the next one is, we  
21 are going to check the structural model. We're going to  
22 check the standard, so that we know the structure can  
23 withstand the load from the supports.

24 We're going to check the gin impingement loads  
25 specified. We intend to check the system transients.

1 We have our system engineers reviewing that work at  
2 Abasco -- at Gibbs & Hill right now.

3 So again, everything associated with this job, it  
4 is our intent to be able to have done sufficient work,  
5 so that we can stand behind that effort and that  
6 calculation, and finally that installation.

7 In some cases, it means not redoing the analysis,  
8 it just means agreeing that the analysis is okay. Or on  
9 a specific or a sample basis. In other cases, it will  
10 be redoing it all. Yes?

11 MR. FLOUGHTERY: Jim Flougherty, Teledyne. Are you  
12 going to use Stone and Webster procedures, engineering  
13 procedures, in the verification effort? Are you going  
14 to review the Abasco audit?

15 MR. SISKIN: The Gibbs & Hill -- sorry, Bob.

16 MR. FLOUGHTERY: The Gibbs & Hill procedures to see  
17 if those are consistent with, in each and every judgment  
18 sense, Stone and Webster procedures, that you have been  
19 using.

20 MR. SISKIN: No. I don't think there is any  
21 incentive to do that. We have our standards that we  
22 have used repeatedly on plants, that you gentlemen and  
23 many of the same faces have reviewed in great detail.  
24 That specifies what sorts of transients, what sort of  
25 operating modes, all the other things that are required,

1 that's what we're going to do.

2 MR. FLOUGHTERY: In the hundred percent sample, I  
3 agree. But when you get down towards the last two  
4 items, is that going to be a hundred percent sample?

5 MR. SISKIN: If there is a particular standard that  
6 would have to be checked on all systems, yes. In other  
7 words, if there is a particular hydraulic transient that  
8 needs to be addressed on small bore, we will make sure  
9 that it's done.

10 So it will be a combination of a random sample,  
11 large enough to get a 95/95, coupled with an engineering  
12 sample which says these are things we specifically ought  
13 to trust, what to check.

14 MR. SHAO: When you say reanalyze, you gave us a  
15 redesign. I thought the only problem was also on  
16 design. Are you going to redesign and analyze, or just  
17 reanalyze?

18 MR. SISKIN: We are going to do whatever is  
19 necessary, so that we can stand behind the design that  
20 is installed. If that means --

21 MR. SHAO: If you are going, to say, reanalyze?

22 MR. SISKIN: If I say reanalyze, and what is  
23 installed is correct, obviously we can stand behind it.  
24 If I reanalyze, and I can't stand behind it, then it's  
25 going to have to be redesigned.

1 MR. SHAO: You're doing redesigning and  
2 reanalyzing?

3 MR. SISKIN: We're doing a reanalysis, and that may  
4 dictate some redesign. Expediency may dictate some  
5 redesign as well. Is that clear?

6 As I said, we were going to mention what we were  
7 going to do with Westinghouse, too. From a practical  
8 standpoint, there has been enough review on a number of  
9 our other projects, and you gentlemen, to feel fairly  
10 confident in Westinghouse's work, very confident in  
11 Westinghouse's work, with respect to specific pipe  
12 analysis.

13 There are several things we're going to do, as we  
14 will get to in a minute. First, we're going to confirm  
15 that Westinghouse had the correct information on which  
16 to base their analysis.

17 MR. NOONAN: I think that's what I wanted to point  
18 out, basically. It's not so much the Westinghouse  
19 analysis, but it's the interface between Westinghouse  
20 and Gibbs & Hill.

21 MR. SISKIN: We're going to reverify that they did  
22 get the correct information. And where Westinghouse  
23 provided information, and that was used to design, we're  
24 going to reverify that as well, or reanalyze it.

25 MR. BOSNAK: Ed, is all the supports on



1 Westinghouse piping your responsibility.

2 MR. SISKIN: Some are and some aren't. Some were  
3 in fact Westinghouse's responsibility. And I don't  
4 propose to go look at those. If they were another  
5 agency, other than Westinghouse, we would go verify  
6 them.

7 MR. SHAO: Let me ask one question. All the class  
8 1 supports are designed by Westinghouse or somebody  
9 else?

10 MR. SISKIN: Some are designed by Westinghouse and  
11 some are designed by Gibbs & Hill.

12 MR. SHAO: But you're not going to look at class 1  
13 supports?

14 MR. SISKIN: We're going to look at class 1  
15 supports designed by Gibbs & Hill or any other  
16 organization other than Westinghouse.

17 MR. SHAO: So you want to look at class 1, class 2  
18 and class 3 supports not designed by Westinghouse?

19 MR. SISKIN: That's right. Now recognize, and I'm  
20 sure, particularly those of you who have worked in this  
21 area in great depth, appreciate when you do an analysis,  
22 when you're going a design and an analysis, it's not  
23 just a single piece. It's an integrated program.

24 And a large part of our effort is going to be to  
25 carefully control the reanalysis and any redesign that's

1 necessary, or considered necessary, on a basis of a  
2 carefully integrated controlled program. We are  
3 basically using the ones that we use on our other plants  
4 as the starting point.

5 We're also trying to encapsulate this effort, so  
6 that we're confirming all the inputs. We're confirming  
7 every place where there would be an interface.

8 We're not going back and rechecking Gibbs & Hill.  
9 Basically, we're starting from scratch in these areas.  
10 It makes no sense to go reaudit or recheck when, in  
11 fact, you're going to do the analysis or redesign all  
12 over.

13 MR. NOONAN: Does that include the modeling?

14 MR. SISKIN: Yes.

15 MR. NOONAN: Gibbs & Hill modeling?

16 MR. SISKIN: Yes. Okay. Now I wish I could simply  
17 say, we're going to use Stone and Webster's standards  
18 intact, because you have seen them often enough. And  
19 while there have been numerous discussions, I think you  
20 felt comfortable with them.

21 There are some problems in using them without  
22 careful review and check. There are a number of  
23 designs and features in this plant which are not  
24 consistent with what we normally specify. Things that  
25 we're not particularly familiar with. It doesn't mean

1 they're wrong. But it's not something that we have  
2 included in our generic analyses to justify our  
3 techniques.

4 So there are going to have to be some changes in  
5 the way our standards are applied. That's under  
6 preparation right now, and we are expecting to have that  
7 done about the 26th of July. We have a sufficient  
8 number of operating procedures, however, already  
9 available, so that we intend to start the preliminary  
10 production work as early as Monday.

11 MR. SHAO: I think the case of -- a couple of  
12 questions. I have the same question. What collation  
13 are you going to use?

14 MR. SISKIN: They are some of the questions that  
15 Vince talked about, earlier. I will answer those  
16 specifically as we go.

17 MR. SHAO: Okay.

18 MR. SISKIN: I think I mentioned earlier though,  
19 we're basically going to stick to what is specified in  
20 the FSAR, in normal standards. At no point have we  
21 reached the conclusion that we have to ask for a  
22 change.

23 So it's the FSAR, for example, specifies the 74  
24 addition, then that's what we're going to use. We're  
25 not going to use the increased value -- not going to

1 request the increased values for the moment. That's the  
2 way we're going. There may be some other things in  
3 progress along that. But that's not our intent at the  
4 moment.

5 MR. BOSNAK: Do you intend to try to take advantage  
6 of -- we do have a request to take advantage of  
7 increased dampening, so that you can say to remove  
8 supports, where that might be, perhaps, a wise thing to  
9 do.

10 MR. SISKIN: The present actions right now are  
11 predicated on using the 161's. Whether there is a  
12 further request -- a future request to use PVRC, or  
13 something like that, I'm really not in a position to  
14 answer.

15 MR. BOSNAK: Decision has not been made?

16 MR. SISKIN: That's right. But we're providing on  
17 the basis of 161.

18 MR. SHAO: You're not using this 397.11 to do this?

19 MR. SISKIN: We're not using any unabsorbed code  
20 cases.

21 MR. SHAO: As in disconnect?

22 MR. COUNSIL: Not at this point.

23 MR. SHAO: What he said and what we got --

24 MR. SISKIN: I think there are some discussions  
25 going on about the possibility of using a new ARS. And

1 if a new ARS were to be approved, we certainly would  
2 look at the advisability of using it for our analysis.

3 But again, if you will notice the procedures.  
4 Again, I'm saying that the path we're taking right now  
5 is to use existing effort, SAR existing code  
6 requirements existing.

7 MR. SHAO: The code in the FSAR?

8 MR. SISKIN: In the FSAR. Consisting NRC  
9 requirements, I have no exceptions. I'm asking to take  
10 at this particular time --

11 MR. SHAO: On reg guide 161?

12 MR. SISKIN: Reg guide 161.

13 MR. TRAMMELL: This is Charlie Trammell. Just for  
14 clarification purposes we do have a letter from the  
15 utility requesting to use code case N-411, which  
16 involves dampening, I think, or piping. The PVRC stuff  
17 you mentioned. We have another request.

18 MR. SHAO: Code K-397.

19 MR. TRAMMELL: 397. I'm not clear on that one.

20 MR. SHAO: That's P shifting. No, P shifting.

21 MR. TRAMMELL: Which relates to piping design. And  
22 then we have a meeting on ARS, which I don't know of.

23 MR. BOSNAK: That's different.

24 MR. SHAO: That's why I said the disconnect. I  
25 don't understand.

1 MR. NOONAN: I don't think we need to get into a  
2 discussion for the code cases right now, but be just  
3 aware that we do have those on record right now.

4 MR. SISKIN: I'm aware they're being processed.  
5 But I'm also aware that we're under an extremely tight  
6 constraint. We want to get this work done. We want to  
7 get it done to the standards we know are acceptable and,  
8 obviously, the existing ones aren't acceptable. If  
9 there is some relief granted, we'll consider whether to  
10 go back to it or use it.

11 MR. SHAO: Are you going to use the full back?

12 MR. SISKIN: Possibly.

13 MR. MILHOAN: This is a question to TUGCO. Have  
14 you revised your chapter 17 QA program description to  
15 address this particular activity? If not, it appears  
16 you need to do that.

17 MR. BECK: I need to understand why you made the  
18 statement, "you need to revise chapter 17 to address  
19 this activity".

20 MR. NOONAN: John, let me interrupt. I think on  
21 all the quality assurance/quality control questions we  
22 have been asking here, particularly those regarding  
23 third party and discipline here, I'd like to defer  
24 discussion on those.

25 I'm going to go back to the staff and talk to them



1 about how we plan to handle that. Now I'll be making  
2 my -- we'll be --

3 MR. BECK: Okay.

4 MR. SISKIN: You will notice one -- there, the  
5 third from the bottom, is to implement fully our quality  
6 assurance program. If we're going to be in a position  
7 to stand behind that design, then we're obviously going  
8 to have to carefully control what we do in accordance  
9 with our standards.

10 Now the last, look up to the last -- that's  
11 probably the -- one of the major significant points  
12 here. We have gone in great detail through the various  
13 minutes of hearings, and watched discussion of many open  
14 items.

15 We have had numerous discussions. We have read the  
16 CYGNA report. We understand a large number of issues  
17 that have been raised.

18 It's our conclusion that by redoing this thing, to  
19 a large number of these issues, therefore no longer need  
20 to be addressed.

21 They are resolved simply by the fact that the  
22 analysis has been done in an acceptable way. We'll get  
23 to that point a little bit more in a minute.

24 As we say there, by reanalyzing the piping and  
25 supports, with proven techniques, consistent with

1 FSAR commitments and NRC requirements, many outstanding  
2 issues are no longer relevant.

3 Where there are issues that remain relevant, we  
4 have a requirement proposed by TUGCO on us to come up  
5 with a resolution. In some cases that will be studies,  
6 some cases it will be special analyses. In some cases,  
7 we're going to say that while it's probably right, it's  
8 not worth the time to go analyze it or study it further,  
9 go change it.

10 There are going to be a number of changes. There  
11 may be a significant number of changes that are going to  
12 be made as a point of expedience. It doesn't mean that  
13 if we took the time, or some other design agent, took  
14 the time, we couldn't show that they were acceptable.

15 But we have made the conclusion. We have drawn the  
16 conclusion that it's quicker to change it to something  
17 that is standard of the industry, if you will, something  
18 that is normally used, consistent, than go on and try to  
19 justify it.

20 In some cases, we will be able to justify it and  
21 let it go at that. The bottom line there is that even  
22 if there were say 500 design changes and construction  
23 changes at the end of the effort, that doesn't mean that  
24 there was anything wrong with the original  
25 installation. It doesn't prove that it was right

1 either, but it doesn't prove that it was wrong. That's  
2 a very important point.

3 Let me give you an example I remember. Larry  
4 remembers this one pretty well. I think Jose may, too.  
5 We did a reanalysis of a plant, really five plants back  
6 in 1979. And we ended up, as a point of expediency  
7 changing the design of over 200 supports.

8 And we discussed the point that I just made, that  
9 that's not necessarily indicative of a bad situation.  
10 And a couple on the ACRS said, "Okay. Well, prove it."

11 By the time the effort was cut, off we had shown  
12 that over a 180 of those changes were not necessary.  
13 But it just took too much time to analyze and prove it.

14 Probably out of the 200, maybe two or three  
15 literally required change. It took more time to analyze  
16 them than it did than just to change them out. And  
17 we're going to be doing some of that here. Mr. Council  
18 has been very explicit about getting the thing done  
19 properly, but getting it done quickly as well.

20 A couple of points before I show you the  
21 organization chart.

22 First, in accordance with our normal policy, where  
23 supports and piping are so inter related, we do piping  
24 and supports together on the project. Individual  
25 supervisors are responsible for a particular run of pipe

1 and the supports associated with it. We find that that  
2 integrated approach is much more effective.

3 MR. SHAO: What do you consider the determined  
4 point of supports? In the concrete or the steel  
5 structure?

6 MR. SISKIN: At this point, we're considering the  
7 termination of the support at structural steel, at the  
8 start of structural steel. We're going on and looking  
9 on a sampling basis to confirm that the structural steel  
10 and the building model are capable of taking a look.  
11 But we're not going to run every load right down the  
12 basement.

13 MR. SHAO: I think I have a different question.  
14 When the structural steel go, somehow it goes into  
15 concrete. Eventually, are you going to look into this  
16 kind of connection, too, the structure steel?

17 MR. SISKIN: We will be looking at a sample of that  
18 to confirm that the techniques used for the design and  
19 the loads specified were done properly. We're not going  
20 to redo it a hundred percent. No.

21 MR. SHAO: So you hundred percent stop at the  
22 structural steel. But you don't look at the connection  
23 between structure steel and the concrete.

24 MR. SISKIN: That's right. Only on a sampling  
25 basis.

1 MR. SHAO: Every support somehow eventually goes to  
2 concrete.

3 MR. SISKIN: That's right. And in a case where  
4 you have a support that is attached directly to the  
5 concrete, clearly you're going to look at that  
6 interconnection, whether it's Hiltis or Richmonds or  
7 whatever.

8 Where in fact it goes to an eye beam, that may go  
9 at that connection to the the eye beam, is where our  
10 analysis will stop, one hundred percent basis. Where  
11 the eye beam goes into the structure, that's a sampling  
12 situation.

13 MR. BOSNAK: So you will end up with footprint  
14 loads and verified --

15 MR. SISKIN: Basically, we'll end up with looking  
16 closely enough at the existing analysis to confirm that  
17 the specified loads as a function of, i.e. and so on,  
18 are reasonable or we will redo them.

19 MR. CHU: Do you remember which version of ASAT 49  
20 you used in this Comanche Peak for additional? Plan 3  
21 FSAR was founded in 1973.

22 MR. SISKIN: Identify yourself, please.

23 MR. SHAO: Dr. K.Y. Chu, will show up on the  
24 organization in a minute. This is a very high powered  
25 slide show we have.

1 MR. SHAO: The question is, what year of -- what  
2 addition after ACR 49 was viewed in Comanche Peak?

3 MR. SISKIN: I don't know. Do you?

4 MR. CHU: It would be 1974, my understanding. As  
5 of recent -- of the ASME code.

6 MR. NOONAN: Division -- I think is a -- I'm  
7 thinking of ASR 349.

8 MR. SHAO: 349 -- 349 would be --

9 MR. SISKIN: Whatever was specified in the FSAR was  
10 what was I assume.

11 This is the organization chart we have put  
12 together. Because it is a challenging assignment and a  
13 high priority assignment, I think we have put together a  
14 fairly strong team. Let me briefly discuss a couple of  
15 the key players here. And then point out how we  
16 understand our interface with the other organizations  
17 is.

18 I have a vice president of Stone and Webster and  
19 manager of our New York office. That office has been,  
20 for the last two or three weeks, and will be for the  
21 next few months at least, running itself. Or I have  
22 some very confident department managers that will be  
23 running it.

24 I have assembled this team of a combination of some  
25 high power people. But also people I have worked with



1 in the past on engineering mechanics work, and feel  
2 comfortable with.

3 Ron Klaus, who is our project manager, the  
4 assistant manager of the engineering department at our  
5 Cherry Hill office. Before that he was manager of their  
6 engineering mechanics division at Cherry Hill. And back  
7 in '79, he was one of my assistants in that five plant  
8 shutdown, which Vince remembers so well.

9 K.Y. Chu, who is the lead technical man. He's  
10 manager of our engineering mechanics department in New  
11 York. Doctor Chu was also one of my assistants during  
12 the 1979 effort.

13 In order to make sure that we really do keep pure  
14 from a quality assurance and an engineering assurance  
15 standpoint, I have asked Dick Kelly, who is our vice  
16 president of quality assurance, to personally oversee  
17 setting up this effort. He has assigned the assistant  
18 manager of our engineering reassurance division in  
19 Boston, Paul Waters, to be the full-time manager of that  
20 effort here.

21 For those of you who aren't aware, Stone and  
22 Webster, has not only a quality assurance effort, but we  
23 also have what is an engineering assurance effort. I  
24 think we were the first and probably by far the most  
25 effective users of that technique.

1       Engineering assurance is the equivalent of a  
2       technical quality assurance. These are technically  
3       qualified people setting up to oversee audit, and check  
4       on the performance of the engineering work we do. In  
5       many cases, equally as qualified to do the work as the  
6       person they're checking on.

7       In at least two cases, the commission has signaled  
8       that out for special recognition of its effectiveness.  
9       That's fully booked on this project. There is not  
10      another person shown on that chart, basically that  
11      doesn't have at least 15 years experience in this area.

12      Doctor Dunlap, who is my engineering manager in New  
13      York, will be spending half time overseeing the work  
14      technically also. And off on the side, you see a box  
15      called the options review committee. This is something  
16      that we have found necessary, particularly in an  
17      expedited effort, in a difficult technical area. You  
18      set up standards. You set very careful procedures and  
19      criteria. And they're adequate the majority of the  
20      time.

21      Occasionally, the working level man hits something  
22      he's not sure of, or it doesn't fit into the bulk of  
23      what we normally do. He doesn't have the authority to  
24      continue on. It has to be referred to the committee.  
25      The committee consists of myself, Doctor Dunlap, Doctor

1 Shao, Ron Klaus, project manager, and any specialists we  
2 choose to bring in to address it.

3 We tend to move the difficult problems out of the  
4 production line right away. And we also assure they get  
5 adequate attention before you end up having a vested  
6 interest in that position as well.

7 So it's been very successful in the past, and I'm  
8 counting on that for keeping this thing moving.

9 As I have said, at the end of this effort, Stone  
10 and Webster is going to be willing to stand up here and  
11 say, and demonstrate, that what is installed in the  
12 plant is correct.

13 In addition, our efforts are going to be  
14 overviewed. They're going to be overviewed by Gibbs &  
15 Hill, the architect of record. They're going to be  
16 overviewed by the project for whom we're working  
17 directly, particularly Mr. Finer, who works for Mr.  
18 George.

19 And Robert L. Cloud Associates, who is a highly  
20 qualified group, and one that we're well familiar with  
21 throughout. They will provide the detailed kind of  
22 technical look at our efforts that will give TUGCO  
23 confidence in what's going on.

24 In addition, Mr. Levin's efforts will also involve  
25 a third party overview of the efforts.

1           You will also notice that these things all come  
2 into Mr. Klaus. And that I also have a line going from  
3 me to TUGCO, as well as from me to our chairman of the  
4 board. The line into TUGCO, as per TUGCO's direction,  
5 is directed to Mr. Council, to make sure that this thing  
6 is done properly and moves properly.

7           Basically, that's it. Let me read into the record  
8 the specific questions that Mrs. Ellis wanted.

9           MR. NOONAN: Before you get on that, just one  
10 question in the TUGCO line. That's Bill Council that  
11 you report to?

12          MR. SISKIN: I report directly to Mr. Council. My  
13 project manager reports to Mr. George and his project,  
14 of course.

15          MR. NOONAN: And again, what about Bob?

16          MR. SISKIN: Bob Cloud is also working for Mr.  
17 George to provide a technical review of everything we're  
18 doing straight through.

19          MR. NOONAN: Everything?

20          MR. SISKIN: Everything.

21          MR. BOSNAK: I'd just like to comment. I can  
22 understand this, and I compliment on you. Some of the  
23 other charts I have commented on earlier, I just  
24 couldn't understand who was doing what. This I can  
25 follow and it's clear.

1 MR. SISKIN: Appreciate it. I'm hoping that we're  
2 not going to spread out the responsibility. If there's  
3 anything wrong at the end, the two people to blame are  
4 here.

5 MR. COUNSIL: Three people.

6 MR. SHAO: We'll point at three people.

7 MR. NOONAN: As far as I'm concerned, there's only  
8 one.

9 MR. SISKIN: Do you want me to read this and give  
10 you a chance to think up some more nasty questions?

11 MR. SHAO: Go ahead. I have to leave in 15  
12 minutes.

13 MR. SISKIN: Is Stone and Webster going to do an as  
14 built walkdown to determine what is actually in the  
15 field before they do their reanalysis?

16 The answer is no. Simply as a matter of  
17 expediency, we are starting our rework in parallel.  
18 We're starting to get the walkdown information. We have  
19 adequate control, so that as corrections are identified,  
20 they will be factored into the analysis. Just can't  
21 afford the luxury of doing everything in a series.

22 MR. COUNSIL: But you are doing a walkdown?

23 MR. SISKIN: We are doing a sufficiently large  
24 sample of a walkdown to give us 95/95 confidence, and of  
25 course, with standard 105, that the information that

1 affects the stress or support analysis is correct. If  
2 we can't get that assurance, we will do more walkdowns.  
3 If need be, we will do a hundred percent walkdown.

4 MR. SHAO: One suggestion I had said before, if you  
5 have sent support, you think you cannot analyze, don't  
6 force it, change it, then analyze it.

7 MR. SISKIN: There are -- the reason I hedged on  
8 that Larry, well, let me -- the reason I hedged on that  
9 is because there is one I would like to discuss with  
10 some people about. I think it can be analyzed by  
11 comments made in the past. There are some comments made  
12 in the past that we can discuss on a technical basis.

13 Second question. Is Stone and Webster going to  
14 analyse all large bore pipe supports in units one?

15 And the answer is yes, except for any that were  
16 designed by Westinghouse. In unit two that's under  
17 discussion right now. I don't think there's been an  
18 answer to that. And really doesn't need an answer at  
19 the moment.

20 How many supports are involved? When and how  
21 long? I think roughly 9,000 is the number I seen. But  
22 don't quote me on that. We're starting Monday. We have  
23 had a training program going this week. Our objective  
24 is to finish this effort by November -- December 20th,  
25 1985.



1 MR. SHAO: How many class 1 supports?

2 MR. SISKIN: I don't have that answer, Larry.

3 MR. NOONAN: Let me ask a different question. On  
4 the sample of your walkdown, is that going to be  
5 described in your program plan?

6 MR. SISKIN: Yes, Dick Kelly is working on it now.

7 MR. TRAMMELL: I have a take-off question on that  
8 walkdown.

9 MR. SISKIN: Just to keep the record straight, let  
10 me answer these questions. And that way you can have  
11 them all in one place, and then you can challenge me to  
12 your heart's content.

13 To what edition of the code are we going to work?  
14 If not the code of the record, why not?

15 We are going to work to the code of record, 1971.

16 Are you going to use what was originally committed  
17 to in the FSAR? At this point, I know of nothing where  
18 I'm requesting a change. That doesn't preclude my  
19 coming back sometime in the future, as I know more  
20 details, and asking for something. But at this point, I  
21 don't know of anything I'm requesting a change for.

22 MR. SHAO: When would you know?

23 MR. SISKIN: I won't answer that question. It  
24 might be the 19th of December when I come across it.

25 MR. TRAMMELL: Tuesday?

1 MR. SHAO: Tuesday, special?

2 MR. SISKIN: I'm proceeding on the existing ARS's  
3 basically.

4 Next question. Are you going to use any code cases  
5 such as 411 in the analysis? If so, what specifically?  
6 Not at this time. At this point we're using 161. I'm  
7 assuming when you're saying code cases, you're talking  
8 about unabsorbed code cases. At one point they become  
9 part of the code.

10 Will we also be using the same code cases? Well,  
11 the rest of it is not germane. Okay. Those are the  
12 questions. Now I cut this gentleman off here.

13 MR. TRAMMELL: Yeah. I just have a, just curious  
14 about this as built walkdown, because we had a bulletin  
15 that was issued in 1979 that I know we're all familiar  
16 with was called bulletin 79 14, which was an as built  
17 walkdown. And TUGCO has told me they have finished  
18 doing that on unit one. And they have not finished on  
19 unit two.

20 If you're going to walk it down again, does that  
21 indicate you want to confirm that confirmation, make  
22 doubly sure that you have any reason to doubt that they  
23 didn't do an accurate walkdown before?

24 MR. SISKIN: I have no reason to doubt that they  
25 didn't do an accurate walkdown. But I have said that

1 we're going to confirm the inputs, at least, on a  
2 sampling basis.

3 And that's obviously a very major input, so I feel  
4 we have to confirm that. Is that all? Howard, you  
5 used -- thank you. You used them up.

6 MR. NOONAN: I'd like to take about a 15 minute  
7 break at this time.

8 (Whereupon there was a recess.)

9 MR. LEVIN: Okay. If we can get started. We have  
10 one remaining presentation on electrical instrumentation  
11 and control. But prior to getting into that, I wanted  
12 to make a few comments, as I indicated on the  
13 introduction, to Ed's system.

14 A few words as to just what we will be doing as  
15 third party to overview Stone and Webster's piping and  
16 supports program.

17 Number one, we will be involved actively in  
18 concurrence, relative to the resolution of the  
19 identified issues in piping area. We will be involved  
20 in overseeing the implementation of the resolution of  
21 those issues.

22 And more importantly, we will be on the receiving  
23 end of a feedback group of information that will come  
24 out of that effort, such that we can factor this into  
25 our root cause and generic implications evaluation.

1 With that, I'd like to --

2 MR. NOONAN: Excuse me. Just one question on  
3 that. When Ed Siskin was talking about taking --  
4 calculating -- the looking back on the structure to  
5 release -- I guess it goes to the concrete, that he was  
6 going to sample on certain -- assuming that he, I guess,  
7 found some problems.

8 But if he did come up with something in the case,  
9 the loads are not being carried into the actual  
10 structure. Is that when you get involved, at some point  
11 in time?

12 MR. LEVIN: That's one example of where we must  
13 definitely be involved.

14 I'd like to introduce Martin Jones, who is  
15 coordinating the electrical instrumentation and control  
16 review.

17 MR. JONES: If you will give me your attention to  
18 the organization chart for just a minute. As we -- as  
19 Howard mentioned early on, electrical line effort, was  
20 basically divided into two parallel paths. One for the  
21 electrical systems. One for the I&C systems.

22 The electrical systems will be Jerry Sitka, and  
23 the INC systems will be Lionel Bates, who is right  
24 here. Give you a little background on both these  
25 gentlemen.

1 Jerald Sitka, BS, electric engineering and BS in  
2 mechanical engineering.

3 MR. MARINOS: Is he present?

4 MR. JONES: He's not here. He has -- excuse me.  
5 Greater than 13 years electrical engineering experience,  
6 with about eight and a half years electrical engineering  
7 experience, applicable to power plants.

8 I think to address the question that was asked  
9 earlier this morning, without having talked to them  
10 directly, the people, no one says they feel he's working  
11 directly in the -- five years.

12 He has four years in addition to that in  
13 consulting, also in the nuclear power field. His  
14 background, he was a technical lead for the electrical  
15 power systems, Midland IDPT. He was an engineer P.E. in  
16 Illinois.

17 Lionel Bates is right here. Has a BS and an MS in  
18 mechanical engineering. 13 years experience in nuclear  
19 plant operation and design engineering. Nine years  
20 experience in I&E design. That's applicable to nuclear  
21 power plant. And has in excess of five years direct  
22 design experience.

23 In addition to his assignment here, he was a  
24 technical INC lead on the IDPT mechanical engineering,  
25 state of California.

1           Beneath those two areas back on the organization  
2 chart, we're presently showing an additional ten  
3 engineers to date. Since we are early on in this  
4 program, we have tentatively identified four of those  
5 people. And we have a number of resumes that we're in  
6 the process of reviewing now. We are looking to track a  
7 lot of people with experience in this field,  
8 particularly with direct design experience.

9           MR. CALVO: Excuse me. You got -- you still got  
10 two functions; right? You got the function of the TRT.  
11 You also got the function of the design adequacy?

12          MR. JONES: Yes.

13          MR. CALVO: Now are you going to have a different  
14 set of people working for the construction adequacy  
15 review, but for the design adequacy?

16          MR. JONES: In some cases. But in some cases there  
17 is some overlap. Basically the TRT work is in the  
18 report stages as, opposed to being in the work stage.  
19 So I don't really feel that there will be too much of a  
20 conflict in those two areas, although I will have to  
21 admit that right now we are being somewhat put back in  
22 the TRT effort, because of concentrations. That is  
23 true.

24          MR. MARINOS: So who are the individuals that you  
25 would engage on the design adequacy review from the



1 construction phase you are going to utilize?

2 MR. JONES: Oh, who is doing that? I have devoted  
3 a saying on the left side of the chart who is a  
4 coordinator on this, is also a coordinator on the TRT  
5 issues. He spends a lot of time --

6 MR. MARINOS: I thought you were going to utilize  
7 people that you presently have your TRT work  
8 construction adequacy work to also involve in the design  
9 adequacy program. Who are these --

10 MR. BECK: Outside yourself, Lionel is involved.

11 MR. JONES: Lionel has been involved as a third  
12 party consultant on some of the work in that area as  
13 well.

14 MR. MARINOS: So the people is Lionel and  
15 Vogosan, the only two people.

16 MR. JONES: And myself.

17 MR. NOONAN: Martin, this morning somebody asked  
18 the question about your experience in design, design in  
19 the plant. Would you answer that question?

20 MR. JONES: I have answered the question. But if  
21 you did not hear it, I have had no direct i.e. design  
22 experience. My experience has been limited to the  
23 design aspects from the utilities standpoint.

24 Let me say that as we discuss this instrument, the  
25 electrical instrumentation issues, that our program

1 closely parallels what Howard give you this morning in  
2 mechanical systems. And there's good reason for doing  
3 that, and I think you will see the parallel as we  
4 continue on.

5 There are three parts to the electrical INC  
6 program from the external sources. There are TRT  
7 identified issues, I'll get to in just a moment. CYGNA  
8 identified issues, which there is now one issue. And  
9 the self-initiated ones. Self-initiated plans, of  
10 course, is designed to protect unknown deviations from  
11 the commitments. And this is the part that will be  
12 discipline.

13 Next slide. Identified -- the TRT identified  
14 issue. And that is electrical component functional  
15 requirements. To give you a little background on that,  
16 during TRT NRC action items, questioned component  
17 qualifications, two different items.

18 One of those would be AMP butt splices as used in  
19 the control line, primarily in the control spread room.

20 And the other was use of Servicair flexible  
21 metallic conduit separation, primarily in the control  
22 room spread room panels.

23 Both of those are trade names. Amp is the  
24 manufacturer of butt splices. Servicair is the trade  
25 name for flexible metallic conduit.

1           During the course of the investigation of TRT, we  
2           have determined that both of these components were  
3           approved for use, prior to their -- to the confirmation,  
4           at least, of their function qualification.

5           In one case, we have had to do a fair amount of  
6           test work that is on the Servicaire conduit. In the case  
7           of butt splice, it's been primarily a case of getting a  
8           qualification package from the manufacturer and having  
9           it reviewed.

10          But the issue here, of course, is that both of  
11          these items, which were initiated in the field, that is  
12          the need for those items, were identified by field  
13          engineer, and accidentally put into service.

14          What we are interested, in this case, is are there  
15          other items such as that which have not been  
16          functionally qualified to the service for which they  
17          have been applied? We intend to address that issue.

18          The next slide is really concerned with the same  
19          thing. That is, the issue is the citing engineer  
20          organization issued use of safety related components,  
21          which don't have a documented engineering review. And  
22          the objective, of course, is provide assurance that  
23          components which were selected by site during  
24          construction meet the approach functional requirements.

25          The action plan will consist of the following,

1 which is to identify components selected by site during  
2 construction. To identify a subset of the above that  
3 did not have that formal approval of the ANE. To  
4 identify the functional criteria for those components  
5 that were not properly qualified, and to evaluate  
6 components against the criteria.

7 At that time, we developed corrective action for  
8 any identified deficiencies, and we will input results  
9 of this action plan into generic implications and root  
10 cause process.

11 The second area of the electrical instrumentation  
12 program was the CYGNA identified design issue, which is  
13 similar to what Howard had identified earlier today.

14 That is, temperature and pressure ratings in the  
15 component cooling water system were changed. But  
16 subsequent to that, the requirements for the  
17 instrumentation associated with that system was not  
18 reviewed.

19 Consequently, two transmitters were identified as  
20 not being pressure and temperature requirements. I  
21 think that's been pretty much closed out by CYGNA  
22 through other information that was found, such as the  
23 use of interlocks. But we in our action plan develop  
24 action plans to address some of the concerns that might  
25 occur in other areas or other systems.

1 MR. MARINOS: Martin, can I go back to the two  
2 previous slides regarding the electric component  
3 function program? Do they relate to TRT?

4 MR. JONES: I'm sorry. This is a continuation of  
5 that same TRT issue.

6 MR. MARINOS: All right.

7 MR. JONES: Those last two.

8 MR. JONES: Okay. The next slide is the electrical  
9 I&C self-initiated evaluation. Unlike a TRT, CYGNA's  
10 self-initiated evaluation is a new program that we have  
11 just begun work on this.

12 Howard touched a little earlier on the basis of  
13 the system selection. These are on the initial system  
14 selection.

15 The electrical power supplies were selected for  
16 three reasons. It's the importance to safety, design --  
17 the many design interfaces that are involved there, and  
18 the diversity of systems equipment. The AFW system as  
19 it applies to the instrumentation and electric part of  
20 it, was selected for importance and safety, because it's  
21 a representative multi-discipline system, representative  
22 of the system.

23 There are many interfaces within and without that  
24 system.

25 And the fourth reason is consistency with

1 mechanical system review. Those are two things that  
2 will flow along with parallel. That's IN and--

3 MR. CALVO: Nothing to do with you. But what --  
4 you elected to pick up the heat water system, because it  
5 has many attributes in that system, both mechanical and  
6 electrical.

7 But if I remember yesterday in the construction  
8 adequacy review, when we took the sampling system, we  
9 say we selected the alternate shutdown system, because  
10 it also has a lot of attributes for the -- interface  
11 through other systems.

12 What have you -- have you considered the alternate  
13 shutdown system, maybe more attributes, at least the  
14 construction of this design adequacy review, considered  
15 that? It doesn't -- fuel water system. Why use -- too  
16 different? What's the system who provides you with more  
17 than anything of the other systems?

18 MR. JONES: I think primarily our part of the AFW  
19 system was -- one of the main reasons, of course, was  
20 the mechanical system. It was selected as the  
21 mechanical system, which was a representative system, so  
22 we could go along in parallel with that. I think that's  
23 the primary reason for selection of the electrical I&C  
24 components that system.

25 To get into the details of the self-initiated



1 evaluation, the objectives are to determine whether  
2 design deviations exist in the electrical  
3 instrumentation and control areas. It's just as simple  
4 as that. As broad as that. Do any design deviations  
5 exist in those areas?

6 The initial scope is, get back to what was said,  
7 review of the instrumentation controls for the AFW  
8 systems, as well as for the electrical power supplies.

9 And then in the review of the electrical power  
10 supplies, just to give you a little bit of what -- scope  
11 of where we're talking about, we're talking about from  
12 the off site power -- off site power for the startup  
13 transformers to the 6.9 KV bus to the 480 volt motor  
14 control centers, all through that path.

15 In addition to that, we have selected balance of  
16 plant, 118 volt, AC, uninterruptible power supplies from  
17 the inverters themselves out to distribution panels.

18 We have selected the 125 volt DC system power  
19 supplies from batteries to their distribution panels.  
20 And then we have selected all interconnections between  
21 the AFW, the off site standby, the 118 volt AC. And 125  
22 volt DC systems. Interconnection between those.

23 Getting back to matching N-45 211, as Howard  
24 demonstrated to you earlier today, the design criteria,  
25 that is, the typical sources for the electrical I&C

1 design criteria, are first, of course, NRC requirements  
2 from 10 CFR 50; the FSAR; other regulatory commitments,  
3 which include reg guides, BTP's, I&E bulletins, SSER's,  
4 and other sources.

5 In addition to that, we consider the vendor  
6 interfaces. A good bit of information comes from  
7 Westinghouse NSSS system. Some of it comes from the  
8 turbine-generator manual, and there are other vendor  
9 intersurfaces included.

10 Another source of design criteria, of course, is  
11 the industry codes and standards. And then there are,  
12 of course, plant unique items which, for example, are  
13 the system electrical parameters and the site  
14 environmental conditions.

15 MR. NOONAN: On the interfaces. You say others.  
16 How many are there?

17 MR. JONES: I would have to pick a thing and say,  
18 for example, the control panel on the AFW turbin. I'm  
19 not saying that is one of the examples.

20 But it's sort of a black box that has a vendor  
21 supply control panel inside there. So I suspect that we  
22 will find many of those.

23 The example that Howard picked of the main steam  
24 isolation valves is another real good example. A  
25 complicated system furnished by a manufacturer, to which

1 we have a number of different types of interfaces.

2 MR. MARINOS: Martin, you talk about design  
3 criteria for the electrical system, 10 CFR 50 and FSAR.  
4 Those are general criteria.

5 MR. JONES: They are very general.

6 MR. MARINOS: They don't address the specific  
7 electrical system design. You have to decide on --  
8 standards, specific things. And I don't know what  
9 decision you will make. Are you going to verify what  
10 gives it has used, is current and is prudent, or you  
11 going to use your own?

12 MR. JONES: We're going to what they're using, and  
13 we will also confirm that that is correct.

14 Any other questions on this page? Typical  
15 implementing documents for the electrical I&C systems  
16 are, for example, and any of these are repeated in  
17 Howard's presentation.

18 There are evaluations for single failure/failure  
19 modes and effects, for the high energy breaks, for  
20 flooding, for missiles and fire hazards analysis.  
21 Another part of the implemented documents, which we'll  
22 look into thoroughly, calculations. Some examples of  
23 those are load capacity, voltage profiles, short circuit  
24 calculations, instrument set points, cable sizing.

25 There are a number of drawings at a very high

1 level, which are also considered to be implemented  
2 documents. For example, those are the one line diagrams  
3 we begin with. Instrumentation and control drawings.  
4 The logic diagrams that are used, and also the system  
5 control items.

6 For the typical design outputs to get into the  
7 third stage, certainly we consider specifications. Just  
8 to give you some typical examples here, that would be  
9 the electric I&C portions of specs for the diesel  
10 generators.

11 Certainly the switch gear, remote control centers,  
12 relays, that type of equipment.

13 And I think we have a misspelling. It's not --  
14 electrical. It's election -- electrical election  
15 specification. That is as it applies across the board  
16 to the work that's going to be done.

17 Another one more important areas of design output  
18 of course is vendor documentation. This includes  
19 drawings, manuals, certifications. Certainly design  
20 data, which we'll get back to in a minute.

21 The last of the typical design outputs of course  
22 are the construction drawings, which are 3 line  
23 diagrams, schematics, wiring diagrams, interconnection  
24 diagrams, instrument data, layout drawings, and even  
25 like cable routing sheets.

1 I would like to say as part of this, I think the  
2 question was asked this morning about the testing  
3 program, startup testing program of the program. We do  
4 plan to make good use of that information.

5 That's available to us from the startup program to  
6 verify, for example, calculations that we're doing up  
7 front in the electrical instrumentation design. Things  
8 like verify -- logic, verification instrument set  
9 points. And that type thing. So we do plan to take  
10 advantage of the data they that we get back from the  
11 plant test.

12 MR. MARINOS: You're going too fast for me,  
13 Martin. I want to go back three.

14 MR. JONES: Okay. I'm sorry.

15 MR. MARINOS: In the one you have evaluations and  
16 calculations. In looking at that listing, and I would  
17 accept the fact that it is probably a temporary list.  
18 There is a significant area that is missing here, like  
19 sizing of motors and valves.

20 MR. JONES: Absolutely.

21 MR. MARINOS: None of those items would imply that  
22 you have got them in there.

23 MR. JONES: It is only a typical list. Oh, okay.  
24 And you will see it when we get in the matrix summing it  
25 up later. Yeah. Thank you.

1 MR. MARINOS: You have got it somewhere else?

2 MR. HUNTER: Marvin Hunter at the Region 4. When  
3 you talked about switch gear motor control and relays  
4 for the 41 6.9 KV bus 480, this includes all the load  
5 check circuits, for the diesel for the emergency start  
6 loss of power realys. You will be looking at all those  
7 circuits?

8 MR. JONES: Absolutely. That's also in the matrix.

9 MR. MARINOS: I want to caution you in one  
10 particular area, your water system. You will have  
11 sufficient design features in the 6.9 KV for motor  
12 sizing, but you're not going to have it in the 480  
13 wall. You're going to go out -- you're not going to go  
14 out there, variable motors of the right size, to give  
15 you a feeling about the adequacy of that design.

16 MR. JONES: That's quite right. I think in the  
17 program Howard as he described it, to make sure to go  
18 through all the lists, the equipment that's available.

19 MR. MARINOS: And generally in -- they will have a  
20 different group to the 6.9 KP design, and the other  
21 group 480. So you will not have that kind of  
22 continuity.

23 MR. CALVO: It goes without saying, your basic  
24 philosophy will be, do what you can with the material  
25 field water system. You will supplement it in such a



1 manner to give, you know, overall reasonable assurance  
2 of the electrical design.

3 MR. JONES: Certainly. I guess we were at the end  
4 of the slide and have gotten to the matrix. This begins  
5 a preliminary review matrix, and it parallels what  
6 Howard gave this morning for the system. Again, these  
7 fall into the pattern of the in 45 211.

8 The review areas that we're covering here, and I  
9 won't read them all. But I'll give you some examples.  
10 For example, the system operating limits, we might  
11 review to focus time current requirements and frequency  
12 requirements when we're identifying the criteria. We  
13 might not look at a design output document that shows  
14 that.

15 So as you can look down through the matrix, it will  
16 identified to you what we have picked in a preliminary  
17 manner as areas we'll look at, as it -- features that we  
18 will look at on each one of those areas.

19 Just to mention a few of these. And these are not  
20 all, by any means. We look at system operating limits,  
21 system operating modes, the electrical characteristics.  
22 Those might include both profiles, short circuit  
23 currents, terminal voltage, cable sizing, motor sizing,  
24 and other items.

25 We will be looking at electrical load capacity for

1 off site power, standby power supplies, inverters,  
2 batteries, chargers, transformers, et cetera.

3 I think -- touched on what you asked earlier,  
4 Darwin. We're looking at load sequence and shedding the  
5 transfers. Looking at protective relaying in that  
6 area.

7 Under the general area of control, some examples of  
8 that are some system interlocks, automatic initiation  
9 operation, manual operation. We also will be looking at  
10 some process control aspects.

11 MR. CALVO: Martin, how much you pick -- two  
12 disciplines to each unit, and two station batteries, for  
13 example?

14 MR. JONES: There are four actually.

15 MR. CALVO: Four of them? That's right. How about  
16 the batteries in the switch yard. Are those independent  
17 of the station batteries? Got some batteries up there?

18 MR. JONES: I believe they're located in the switch  
19 yard; is that right, Sam? They are located in the  
20 switch yard.

21 MR. CALVO: So independent of the station  
22 batteries? Okay.

23 MR. JONES: Instrumentation. We'll go to status  
24 indication, operational surveillance areas, alarm  
25 functions, and certainly protective devices and

1 settings.

2 We will look at component functional requirements.  
3 That is, we'll look at qualifications, for example,  
4 components to select. We will look at another area,  
5 single failures use FMEA's.

6 One area we haven't touched on yet, I don't think  
7 has been touched on today, support systems. We're  
8 looking at from an I&C standpoint, we think two good  
9 systems to look at that haven't been covered are, the  
10 diesel generator fuel transfer system, which is the  
11 support and power supplies and diesel generator cooling  
12 water requirements.

13 In addition to that, we expect to be looking at  
14 some I&C requirements for the HVAC system as well.

15 MR. CALVO: The -- water system is one of the  
16 systems -- had the -- the other one. Was supposed to do  
17 something that the fuel water system must do for the  
18 Westinghouse plants. I don't recall. Has to be  
19 independent. Some kind of requirements in there.

20 Maybe you want to consider that or keep that in  
21 mind when you're going through this water system with  
22 the electrical instrumentation. I think you may have  
23 submitted -- I don't know.

24 From the licensing standpoint, Westinghouse is  
25 going to come out with a generic design.

1           So there is no details available? I'm sorry.  
2       Forget it. Okay.

3           MR. MARINOS: Martin, let me ask about the diesel  
4       generators. John Beck stated yesterday briefly that the  
5       diesels are being tested for increase in capacity and  
6       increase in demand, or whatever it is. Do you have any  
7       information?

8           MR. JONES: I'm not familiar with that at this  
9       point. I'm sure we will be.

10          MR. MARINOS: So is your effort going to confirm  
11       the maximum demand on the diesels before or after they  
12       do the tests, whatever they have decided the demand will  
13       be?

14          MR. JONES: I'm sure it will be after the tests.

15          MR. BECK: What -- Angelos, to clarify our request,  
16       is simply to test the diesels at their original design  
17       capacity, rather than the limitation that was based on  
18       them in the initial part of the diesel generator issue  
19       by the program plan. The name plate.

20          MR. MARINOS: Name plate you're going to retest?

21          MR. BECK: Yes. And then finally, as we show on  
22       the chart, multi-discipline considerations. I believe  
23       these were the same list that Howard covered earlier.

24               Those are the high moderate line breaks,  
25       environmental qualification, internal flooding, fire

1 protection, with some protection of seismic  
2 qualification.

3 Are there any other questions on this? This was  
4 the last of the slides.

5 MR. CALVO: I do not.

6 MR. LEVIN: Vince, this concludes the prepared  
7 portion of our presentation. I had a few summary  
8 remarks, and I'm sure John Beck will want to add to  
9 those.

10 I guess one observation, it's been a long day, and  
11 we have gone through a significant amount of detail,  
12 even though, with all that, we still have only presented  
13 a summary of our program.

14 And, as John Beck and Vince stated earlier, the  
15 purpose of our meeting was not to elicit a specific  
16 signof for approval on the part of the staff at this  
17 time. However, what we were attempting to do was  
18 communicate a sense of what we were doing.

19 In that regard, I hope that the breadth and depth  
20 of our review is apparent to all of you. We welcome and  
21 expect additional questions and follow up, particularly  
22 after we submit our program plan and action plans that  
23 will govern our work.

24 In particular, in those documents, we will be  
25 describing in detail the interrelationships, and some of



1 those concerns in terms of organization that were  
2 expressed today.

3 I hope to be able to make sure that is absolutely  
4 clear. I believe that the details in the presentation  
5 of the cable tray effort will satisfy some of the  
6 questions that came up in that area as well.

7 Additionally, we will elaborate on the role of the  
8 quality programs evaluation in our review to make sure  
9 it's absolutely clear.

10 And, Vince, one other comment, that I believe that  
11 we will be getting back with you, progress our  
12 activities, relative to where we stand on phase three  
13 principally, and how we're proceeding on our  
14 determination of scope, and the depth of our review as  
15 representative in our checklist.

16 I guess in summary, one thing I hope we have  
17 accomplished today is a communication of the magnitude  
18 and comprehensiveness of our program. And I guess this  
19 is -- it really gets back to our goal. That being that  
20 what we're attempting to do is provide reasonable  
21 assurance that safety significance design deficiencies  
22 have been detected and resolved.

23 MR. CALVO: Vince, I wanted to put into the record  
24 a couple of questions given to me by the -- you want me  
25 to do that?



1 MR. NOONAN: Why don't you wait until we get  
2 through this? I'm going to ask Bill -- I want to talk  
3 to you about -- you want --

4 MR. COUNCIL: I got one.

5 MR. NOONAN: John, do you have anything you want to  
6 add?

7 MR. BECK: I would only summarize by repeating a  
8 couple of things that I said yesterday as we started  
9 out. This program is intended to demonstrate that we  
10 have our arms around all the issues, or have identified  
11 the methodology and a program to do that, where we  
12 haven't identified issues.

13 Our end goal is to do what Howard just said.  
14 Provide that reasonable assurance that there are no  
15 safety significant deviations remaining at Comanche  
16 Peak. To identify all of them and resolve them.

17 I hope that we have been successful in this  
18 overview context in demonstrating that this program is  
19 capable of doing that. We look forward a rigorous  
20 review in a detailed sense in the coming weeks and  
21 months of the effort.

22 MR. NOONAN: Okay. I'm going to -- Mrs. Ellis, I  
23 will offer you the opportunity, maybe you can join us at  
24 the table, where we can give you a microphone, if you  
25 have some comments.

1 Well, in the action plan we have, you know, utility  
2 said the direction plan has covered all of the issues  
3 that were talked about for licensing. One thing that we  
4 have not had a chance to discuss to any depth, not going  
5 to do it today, but I do need to encourage some, is the  
6 operational aspects. We have not talked operations at  
7 all. That and show operation. The training, all of  
8 that. All those.

9 I think that's being involved. Jose will be the  
10 one that's doing that for me. And he will be making  
11 known his -- I guess we'll be getting back to you, and  
12 what we need to do, what we need to discuss in that  
13 area.

14 Jose had a couple things here he wants to bring up  
15 here, mainly on functionability of equipment and pre-op  
16 testing.

17 MR. CALVO: It gets into a little bit into the  
18 operational aspects of it.

19 MR. NOONAN: Go ahead and read it into the record.

20 MR. CALVO: And my group leader just left, and  
21 asked me to read this. And bear with me in English.  
22 And I'm going to have some difficulty to operate to --

23 "I guess the focus of discussions from the past two  
24 days has been on the adequacy of equipment design and  
25 quality of equipment installation, and how this -- those

1 will be determined.

2 We heard those -- most, if not all, that equipment  
3 has been installed for varying periods of time."

4 He also incurs that the action plans which you had  
5 -- "the utility has presented, will be taken at this  
6 period of time to reach a conclusion."

7 Therefore, the first question is asked. "Do you  
8 have a formally documented program for maintaining that  
9 -- installed equipment in a functional high quality  
10 estate?"

11 And the second question that he has, "Have you  
12 given any consideration to repeating some preoperational  
13 test, or a portion of this test, because of the lengths  
14 of time that it will pass to the -- because a portion of  
15 the test, to determine the continued systems  
16 acceptability due to the length of time, which will head  
17 past since they are -- since this was done before?"

18 So these -- he's worrying about the fact that, you  
19 know, you had done things in the past. I guess the same  
20 question would apply to the operator qualification. You  
21 have maybe -- I don't know what stage you have been  
22 going through it. What are you going to do all this  
23 time? You will be going trying to demonstrate the same  
24 quality and construction quality?

25 MR. COUNCIL: Would you like me to address those

1 right now?

2 MR. NOONAN: If you want to.

3 MR. COUNSIL: I can. Let's take the preventative  
4 corrective maintenance program. There is a document,  
5 preventative maintenance and corrective maintenance  
6 program. Preventative maintenance is in fact scheduled,  
7 and it is being carried out.

8 I do get reports on a monthly basis on any missed  
9 preventative maintenance, and what it's scheduled as far  
10 as to bring that back up.

11 In addition to that, all we also have to draft  
12 technical specifications. And where possible, in this  
13 cold shutdown mode that we're presently in, we're also  
14 carrying on the surveillance requirements of the  
15 technical specifications, and those are ready to model  
16 any time NRC would like to. Now I believe Region 4 is  
17 in fact doing some of that work now.

18 We have also, now going to your second question --  
19 all right. I'll come back.

20 I think there was a second half to the first one  
21 one.

22 MR. CALVO: Yeah.

23 MR. COUNSIL: When am I going to repeat the  
24 preoperation tests? Only if work is done on those  
25 systems that will require repeat of those preoperational

1 tests. Those systems by and large are in operation  
2 today.

3       Wherever possible, if the system is placed in the  
4 layoff, and we have rotational requirements, as you  
5 know, on pumps and motors and things of this nature.

6       Get them off the flat spots and bearings so they  
7 don't have flat spots and bearings, things of that  
8 nature. We operate the systems, rather than just  
9 turning where their bulks are in, so forth.

10       I am not presently planning repeating any  
11 preoperational tests unless we do work on systems that  
12 would require, you know, modification or whatever, that  
13 will require a repeat of the preoperational test.

14       As far as operator training, we have submitted our  
15 operator retraining requalification program. We're  
16 living to it right now. Operators are retraining one  
17 week in six, with a documented program.

18       In addition to that, we are presently working on  
19 the end felt accreditation programs. And those are in  
20 process at this time in order to see accreditation.

21       But as, you know, not being an operating plant, we  
22 do have a time frame after the operations, before  
23 accreditation. But we are preparing those programs to  
24 date. And the preparation is there for your audit as  
25 you desire to.



1 MR. CALVO: Okay. Thanks.

2 MR. NOONAN: Okay. I don't have any further  
3 questions. Any further staff questions on the program  
4 plan? Mrs. Ellis?

5 MS. ELLIS: I have got quite a few. A lot of these  
6 are informal questions, too, just sort of as I tracked  
7 them through the day. And I'll throw them out. If you  
8 would like to address them as we go, fine. Otherwise  
9 this is some of the things we will be looking for, among  
10 others, of course.

11 One thing that I noticed early on was, I believe  
12 Billie Garde mentioned this, and I want to also  
13 emphasize, because it's something I noted immediately,  
14 was our concern about, Howard, about bringing things to  
15 the attention of TUGCO and not auditing or having  
16 CPRT audit the implementation.

17 Historically, of the plant, one of the problems we  
18 have had has been with implementation. And I think it's  
19 very, very important that that be reconsidered, and that  
20 something worked out so that the CPRT does audit not --  
21 does audit the implementation as well.

22 And also that some method is set up so that you  
23 also evaluate use as is dispositions of any corrective  
24 action. I think that's a very, very, very important  
25 area.



1        Another thing I was wondering in regard to CYGNA,  
2        have the applicants now provided CYGNA with all of  
3        CASE's filings? For instance, our answers to the  
4        applicant's motion for summary to disposition. I would  
5        like to know what the status is on that. I'm not sure  
6        at this point in time exactly what CYGNA has received  
7        from us as far as what they really know about our  
8        concerns. Have they received our findings?

9        And in addition, what is the status as far as  
10       people on the CPRT teams and so forth? I was very  
11       concerned about summaries being given from the -- that  
12       were prepared by the attorneys, for instance.

13       And I think this is something we're definitely  
14       going to want to know, probably from each of the heads  
15       of the different organizations, is exactly what you know  
16       and what the source of your knowledge is in this  
17       regard. What you have been told about issues that have  
18       already been identified as problem areas in support.

19       Another thing I was concerned about is CYGNA's  
20       apparent desire to wait -- or the applicant's desire to  
21       have CYGNA wait to have the CYGNA report in final form.  
22       And I certainly would urge that at this point in time  
23       that there be some consideration given to some sort of  
24       draft, rather than final report.

25       I also would point out that it's been a continuing

1 concern of ours, and I think it's almost to the point of  
2 being a moot point, as to CYGNA's independence, in one  
3 regard, looking at it from one aspect.

4 The interaction with the CPRT, for instance, will,  
5 in one sense of the word, banish CYGNA's independence,  
6 which has been subject to much discussion at the  
7 hearings and so forth.

8 I just wanted to point that out. I think at this  
9 point in time that really it would be better for CYGNA  
10 to find out all that they can about different issues  
11 which have been identified.

12 And as far as the applicant's people, the new  
13 people that have come on board, all of you, we're very  
14 much interested and we're wanting to know what previous  
15 work you may have done at Comanche Peak, whether you  
16 have worked with, or for one another.

17 What ties you may have in any way, shape, or form  
18 to the project, either through the people who are at the  
19 plant now, who have been at the plant, or your ties to  
20 others who are working on this new effort.

21 I think that's something we're very much interested  
22 in, and I think it will save everybody's time if you can  
23 get that information together for us.

24 Another thing that concerns us, and I think we will  
25 be wanting an answer to this as different needs of the

1 area go, and that is, where you will be when this plant  
2 goes on line. Are you going to be just here for this  
3 one effort, and disappear forever and leave it to  
4 somebody else to see that it's implemented and done  
5 properly? Or will you be here for the long haul, and  
6 see that it's done? That's something we will want to  
7 know from each of the new people that come on board.

8 Another thing, along that line, I'm a little  
9 concerned, Mr. Council, as to how you have been  
10 presented to the people at the plant. I'm talking about  
11 the workers and the QC inspectors, everybody that works  
12 there.

13 How much do they think -- how far do they think  
14 your authority extends? Do they think that you're going  
15 to be there for the long haul? Do they know how much  
16 authority you have? This sort of thing, you know, how  
17 much -- in other words, it's fine to go in and say,  
18 "Okay. We're going to wipe the slate clean, have a  
19 brand new QA/QC sort of outlook here."

20 But unless that has filtered all the way to the  
21 bottom, I think that it's very important that this be  
22 made crystal clear right now, and immediately, and in  
23 the most forceful terms, to the ranking file here on  
24 down. So that's something we'll also want to know, and  
25 also how this has been done and so forth.

1           When reviewing the checklist for discrepancies,  
2       deviations, deficiencies and so on, in nonconformance  
3       reporting, anything along the corrective action line,  
4       identification line, is then nonconformances, we'll want  
5       to know when, where, and how, and by whom, trending will  
6       be done on these matters? How they will be factored?  
7       And who will be doing that?

8           And also, going beyond that to what use the  
9       trending will be put, and exactly how this will be  
10      incorporated into the plant. Also, in regard to check  
11      lists, in talking about the documentation review  
12      process, conclusions, and so on, I think that, Howard,  
13      you mentioned that there was a full set of check lists  
14      that you expect to be available in the August time  
15      frame.

16          On the work that's being done at the plant now,  
17      what's being used? We would like to see those I think  
18      as soon as possible. And if work is ongoing at the  
19      plant on anything, there should be some sort of the  
20      check list or something available now.

21          In regard to the design issues, we're concerned  
22      about what's going to be looked at. I think before I  
23      had indicated at one of the meetings to you, Howard,  
24      that we were concerned about the issues. I think the  
25      March 23rd meeting.

1           Probably some of the issues, you mentioned  
2 something to the effect that issues were on the table,  
3 and you seemed at that time, as though you were more  
4 familiar with the summary disposition as far as the  
5 Walsh/Doyle went.

6           I want to make real clear as far as the design  
7 issue -- unless the Walsh/Doyle issues go, the  
8 Walsh/Doyle allegations will contain primarily, I guess,  
9 summarize, primarily in the August 22, '83, case,  
10 proposed findings on the Walsh/Doyle issues.

11           And the summary disposition motions were part of a  
12 three-prong plan by the applicant. And they were one  
13 prong of that plan, which was to -- which it was agreed  
14 upon would determine the design adequacy of the whole  
15 plant.

16           So if applicants have in mind now backing out of  
17 that deal, which it appears, what you have got in mind  
18 at this point in time, I'm not saying we'll agree to  
19 that first of all. But should that develop and should  
20 applicants want to do that.

21           That means immediately the summary disposition  
22 motions are definitely not the only issues. You have to  
23 go back and address all the Walsh/Doyle issues as far as  
24 we're concerned, from that point on.

25           So you need to be aware we will be wanting you to



1 look at all of those things and be pushing for you to  
2 look at all of them. Otherwise we would have not just  
3 agreed to the few issues which just the applicants  
4 themselves chose.

5 Also we need to know how much the new people know  
6 about these issues. Have you reviewed things like the  
7 transcript of the May, 1983, hearings? Where did you  
8 get your information about these things on the design  
9 issues especially? We need to know how much you are  
10 aware of those things.

11 One of the things that most of you will not be  
12 aware of, because you weren't around at that time, was  
13 the really difficult situation that CYGNA found itself  
14 in the February of '84 hearings, where they thought they  
15 had a handle on everything.

16 But when they came to the hearings, they were in  
17 effect sandbagged, because they were hit with questions  
18 they were unable to answer. And said, "We haven't  
19 looked at that. We will have to go back and look at."  
20 We don't want that situation to come about, once we get  
21 to the hearings part. We think we should have positions  
22 firmly in hand.

23 And in fairness to all of you, you need to know  
24 what those issues are. And you need to be able to  
25 address them when you to come to the hearings. So if we



1 ask you for instance, "Have you checked to see if this  
2 support is unstable?" You can say, "Yes," because you  
3 know that that's an issue, and it's something you're  
4 going to have to deal with.

5 And you will be able to say, "Yes, we have. And  
6 this is our conclusion about it and why." And your  
7 calculations to back it up or whatever.

8 One thing you will find, too, is that we will be  
9 very, very nosy about what you're doing. We'll want to  
10 see things like extreme details on things. We will want  
11 to know calculations. We want to have time to review  
12 those. I'd like at some point to be able to discuss  
13 some of these things with you in a little bit more open  
14 forum than we have in the past, so we won't go to  
15 hearings in a blind state of mind.

16 One thing too, that is very difficult for us,  
17 because some of you we haven't had a really chance to  
18 meet with before, to talk with. That it's very  
19 difficult for us, because we have two engineers. Just  
20 think. Two engineers have caused all this trouble, that  
21 used to work at Comanche Peak.

22 One of the overriding concerns that we have and we  
23 think all of you should be thinking about and  
24 addressing, and at some point in time should address,  
25 is, how could this have at all been averted? Why did it

1 have to happen this way? What was there within the  
2 system that did not pick up on these concerns from these  
3 two engineers while they were still employed at Comanche  
4 Peak? Why did this develop in the way it had to  
5 develop?

6 I think that that's one of the things that needs a  
7 lot of work. And it's something that the applicants  
8 need to come to grips with, not just in the engineering  
9 area, but also in the other engineering areas as well,  
10 where even when we have have had talk of intimidation  
11 and harrassment of QC inspectors and this sort of thing.

12 Another thing we're a little bit concerned about is  
13 the amount of detail for some of this. For instance, on  
14 some of the listings we notice that CYGNA wasn't listed,  
15 specifically though the IDP was listed. And it would be  
16 very helpful, I think to everybody, certainly when we  
17 get to the hearings, the licensing board, if you could  
18 identify these things like by phase one and two. Phase  
19 four in a little bit more detail than what you have.

20 Another thing that -- we will be wanting to know  
21 about each of the different categories is, who defines  
22 and bounds these issues? Where you get your  
23 information? Who decides all of that? Who  
24 specifically? What is the process that's gone through  
25 to find those determinations?

1 Another thing in regard to the corrective action  
2 program, I think it was mentioned several times that  
3 when problems arise and are identified, that an NCR will  
4 be written up or something. We would like to know, are  
5 NCR's going to be the method used? One of the things in  
6 the TRT's finding was there was something like 40  
7 different types of different -- or different things  
8 called IR's, NCR's, CMC's, so forth, to identify  
9 different forms of deficiencies in the plant.

10 We would like to know what kind of system you are  
11 using, and what will be used by each of you in this.  
12 Exactly how it fits into the overall system? How it  
13 gets into the trending process and so forth, and who  
14 writes them up? Who will be dispositioning them, all  
15 through the whole process.

16 Another thing that is still a concern, and this was  
17 discussed somewhat today. But I'm not sure it's really  
18 clear in our minds at this point, is when you have a  
19 QC inspector go out and look at a support, are you going  
20 to have an engineer looking over his shoulder, who can  
21 say whether the support is unstable?

22 It's still not clear to us exactly how the design  
23 QA part is going to fit in this. How that  
24 identification is going to come about on a regular  
25 basis.

1 And one of our concerns is that, though we realize  
2 you're pushing hard to try to get one unit licensed,  
3 these licensing hearings for unit one and unit two. And  
4 there's still a lot of work to be done on unit two.

5 So we have concerns that go not just to what's been  
6 done in the past with unit one, but what's going to be  
7 happening from now on with unit two.

8 Okay. This was mentioned a little bit earlier,  
9 too. If one of the vendors has an identified deficiency  
10 in one area, would they look -- would you then look at  
11 other areas that they're involved in? We would like to  
12 go a little bit further from that, and find out exactly  
13 how this determination will be made, who would be doing  
14 this, how would it be identified, will it be  
15 proceduralized?

16 Another thing we're very interested in throughout  
17 this whole process, by the way, is the procedures. If  
18 something isn't proceduralized, we feel that many times  
19 this means you're going to be expecting somebody else to  
20 do it, and nobody is going to end up doing it.

21 So I think we're going to be looking very closely  
22 at the procedures for doing a lot of these things.

23 In regard to the design QA which I mentioned,  
24 would be interested in finding out just how this whole  
25 process with design QA is actually accomplished. The

1 steps that are going on and that will be going on  
2 throughout the whole design effort or review of design  
3 effort.

4 And about procedures. Will these procedures be in  
5 place just for this review? Are they going to be there  
6 from now on? Are these going to be procedures for the  
7 site to use exactly? What kind of status will these  
8 procedures have, and what place will they have in the  
9 plant?

10 One thing too, I believe someone with the NRC, I  
11 don't recall now who mentioned that test results can be  
12 relied on in some instances. I'd like to put out a word  
13 of caution there. A lot depends on the type of tests,  
14 who did them, whether they are under fire in our  
15 hearings process, whether they have been accepted by  
16 everyone, including us. And because some of the test  
17 results are definitely still very much in question, we  
18 won't stop questioning those, of course.

19 And another aspect of it is whether or not they  
20 have been tested under all conditions. And you have to  
21 look at things like how the cycle goes, and this sort of  
22 thing.

23 So I think -- just a word of caution then. If you  
24 do rely on tests, in the event of QC, you can be sure we  
25 will be looking at those pretty closely, too. So you

1 need to be ready to answer those kinds of questions,  
2 because that's something we will be talking about.

3 Okay. In discussions earlier about NRC interface,  
4 I think that it was mentioned, John, that the NRC might  
5 want to come to examine documents. We would like to  
6 get in on some of that. I just wanted to point that  
7 out, that, you know, as I mentioned before, yesterday, I  
8 think that if we've got no other way to go, we'll  
9 definitely file whatever interrogatories request for  
10 documents, whatever, formally within the formal hearing  
11 process. It will take a little longer.

12 And eventually when you guys get down to the wire  
13 and want to get your license, you're going to be sitting  
14 there waiting on us to review documents, I'm afraid. I  
15 think you need to rethink your attitude on some of that.

16 Throughout all of the reviews that you will be  
17 doing, we'll be interested in knowing if you're looking  
18 at the FSAR commitments at the time the work was done,  
19 rather than as they currently exist. We want to be sure  
20 that you're aware of that so you will be able address  
21 that also. Because that's an issue that we'll certainly  
22 be looking at as well.

23 When you're looking at, in regard to like pipe  
24 supports or cable tray supports, or whatever, who and  
25 how will they be checked to make sure that all the



1 CMC's, NCR 's, whatever, have been incorporated? So  
2 that what you're looking at is in complete package. The  
3 whole process there will be important to us.

4 Also we'll be interested in finding out if when you  
5 did review things, if adequate calculations and  
6 justification existed when the supports or whatever's  
7 involved were first designed. And we would like to know  
8 exactly how that process will go -- will be handled, who  
9 and how it will be handled? Who will be handling it and  
10 how it will be?

11 One thing with regard to generic implications, and  
12 Billie Garde mentioned this, too. About the very minor  
13 discrepancies that you might not really be looking at  
14 them as closely as we would like for you to look at  
15 them. One of our concerns, such as mathematical errors  
16 is that in the hearings process? We have been assured  
17 that the applicants went through like nine iterations or  
18 so.

19 And it's our contention that if you go through  
20 something like nine iterations, and you have nine  
21 different people checking this, by the time you get  
22 through with it, you shouldn't have many math errors.  
23 One or two might pop up occasionally. Certainly nothing  
24 to the point of what we have seen here.

25 And we would especially like to call your attention

1 to CASE's first motion for summary disposition that we  
2 filed. And in that, we went through and pulled out,  
3 just from the CYGNA report, some errors that were  
4 pointed out by CYGNA, in percentage like 70, 72 percent,  
5 something like that, which is outrageous.

6 And this is something that we're very definitely  
7 interested in. How this could occur, went through all  
8 these different iterations, and where does that leave us  
9 as far as confidence in the rest of the plant? How does  
10 this impact on the overall competence, as far as the  
11 other things which haven't been looked at as closely, as  
12 possibly pipe support, cable supports, and so on.

13 In that regard, we would like also to find out if  
14 these discrepancies, even though you do consider them  
15 inconsequential, if they will be identified and set  
16 forth in the report similar to the way CYGNA did in  
17 their written report. And we would like to urge that  
18 they are, that they should be.

19 In regard to the cable tray supports and the pipe  
20 supports, we have some problems with some of the people  
21 which you have involved. Now when I say this, it's not,  
22 I hope that these people won't take this personally.

23 But Doctor Auti and John Fenree, I feel really  
24 are too close to the project. They have filed extensive  
25 affidavits and so on. They reviewed the pipe support

1 design area. They have been very, very closely involved  
2 with all this, to the point where even intentionally,  
3 unintentionally whatever, they have a vested interest in  
4 the outcome.

5 And we think that perhaps you should rethink some  
6 of your procedures and set up where you have them  
7 following very closely on some of these things.

8 I noticed on the cable tray supports that you're  
9 going to sample the as built in unit one and a hundred  
10 percent of the as built in unit two. We would like to  
11 know how that criteria came about? What was the  
12 criteria for making that decision, or why was that  
13 chosen?

14 In regards to the self-initiated evaluations, we're  
15 interested in where you got or will get your loads and  
16 your load combinations. Which design procedures will be  
17 used, where they came from: Are they the ones that they  
18 were designed to, or are they current procedures? What  
19 are you looking at when you're using these in your  
20 analysis or your review? And I will get to this in a  
21 little more detail in a minute.

22 In regard to concrete design, will the Richmond  
23 insert summary disposition motion that I answered,  
24 specifically, also be included in that? If so, how and  
25 who will be looking at it? And in what manner will it

1 be addressed?

2 With regard to samples, and in particular I wrote  
3 this note, was looking at the piping and supports. As  
4 far as the sampling basis, who will make the  
5 determination of how this is done? How will it be  
6 handled? What specific criteria will be used to  
7 determine the sampling, and will it be proceduralized?  
8 And, if so, what procedures and so forth?

9 And, Mr. Siskin, especially we were very concerned  
10 to hear you speak so many times of expediency. We  
11 realize the applicants are in a hurry to get the plant  
12 on the line. However, I think the overriding concern  
13 for all of us has got to be whether or not the plant is  
14 safe.

15 In addition, we're interested in, and the last  
16 thing, we'll be interested in, how it got to be in the  
17 shape it's in right now, and what shape it is in right  
18 now.

19 MR. SISKIN: I'd like to answer that one, by the  
20 way, if I might. There's nothing that I said that  
21 implied that.

22 MR. NOONAN: I can't hear you.

23 MR. SISKIN: There is nothing that we are going to  
24 do that is going to be to any standard other than what  
25 is safe. If there is two possible ways to solve a

1 problem, one by analysis and one by fix, we will  
2 probably choose the one that can be done the quickest.

3 In either case, the result will be a safe and  
4 satisfactory product. That is the only standard to  
5 which we're working. That is the only standard that  
6 TUGCO has imposed on us.

7 MS. ELLIS: Okay. As far as the design issues that  
8 are still open, I can give you an answer right now.  
9 That probably means that you're going to go through here  
10 and say on most of these, "Let's change them." Because  
11 we have had CYGNA looking at this stuff now for a couple  
12 years.

13 We have been looking at it for two and a half,  
14 almost three years. So I think that the fix, if it was  
15 fast and easy, would have already been made.

16 So I think that what you're probably going to end  
17 up with, if you take that approach, is coming in and  
18 saying that it's going to be easier just to go out there  
19 and take this support out, and do this, and to change  
20 it, or whatever.

21 I just wanted you to be aware of that. And I think  
22 that this is going to leave unanswered, a very big  
23 question that the licensing board is going to be  
24 interested in, and certainly we're going to be  
25 interested in. And that is, whether it was done right

1 to begin with.

2 MR. SISKIN: All I can answer is whether it would  
3 be right --

4 MS. ELLIS: I agree. And specifically we're  
5 interested in finding out how much you know about what's  
6 going to be known as the Walsh/Doyle allegations, and  
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8 looking at this? Have you looked at all the findings  
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23 And also in the findings, these are some things  
24 we're going to be inquiring to, and need to be addressed  
25 at some point in time. What kind of welding criteria is

1 going to be used, this sort of thing.

2 Also -- one more question before I go on to this.  
3 In the electrical area, we'd like to know who  
4 specifically selected the AFW system. That's one of the  
5 things that we're very much interested in. And the  
6 specific criteria that was used for its selection.

7 And you will be glad to know finally, I handed Mr.  
8 Noonan today, I believe he's given copies of it to all  
9 of you, of code case which we -- our code interpretation  
10 NSR, which we came across it interpretation Roman  
11 Numeral 3-1-83-49R.

12 And what this appears to say, now I haven't really  
13 thoroughly reviewed this with Mr. Walsh and Mr. Doyle  
14 yet. Mr. Doyle hasn't seen it yet, in fact. But what  
15 it appears to say is that there is no problem with the  
16 cinchdown U bolts, because very simply you can't use  
17 torqueing as a means of locking on that -- on these  
18 particular items.

19 Also it raises a question which we'll be addressing  
20 in some form at some time, regarding whether or not the  
21 applicants, when they decided to use the paint as a  
22 locking device, if you will, whether or not they did  
23 what is recommended here, which is that the user should  
24 satisfy himself with any other device than those  
25 described in F4725, is capable of acting as a locking

1 device under false surface conditions.

2 I think that's it. I appreciate you sticking with  
3 me through all these questions. I had quite a few  
4 today, and I appreciate the opportunity.

5 MR. NOONAN: Mrs. Case, I want to pick up on one  
6 thing you mentioned about the CYGNA. And you said that  
7 you worried about that we're not going to have the  
8 independence any longer. I'm just not quite sure what  
9 you mean by that. Would you explain it?

10 MS. ELLIS: Well, independent has a lot of  
11 different connotations. I guess one of the things that  
12 we have begun to believe over a period of time, is that  
13 in a way, when you have a contractor or an outside  
14 auditor coming in, I guess in a way, what they see is  
15 dependent on a lot of things. It's dependent on what  
16 they're told their mandate is to do, of course.

17 Inside that context, a lot depends on how deeply  
18 they look at things. For instance, CYGNA did not  
19 immediately identify some of the problems which were  
20 later identified in the hearings process, a lot of  
21 them.

22 For instance, when Jack Doyle started cross  
23 examining on some of the issues and said, "Have you  
24 looked at this?"

25 And they said, "No, we have to go look at that."



1           This is the sort of thing I'm talking about. From  
2 that point on, once they start getting this kind of  
3 outside information, in one way you are decreasing their  
4 independence, because they're getting feedback from  
5 other people, and these people are more or less --  
6 telling them there's a lot of things they should look  
7 at.

8           This is the aspect of independence I'm talking  
9 about. At this point in time with CYGNA, I think it's  
10 important that they have input from everybody. And that  
11 they see all of our pleadings, so that when we finally  
12 do go to hearings again, they will be able to adequately  
13 address all these things and have these resolved.

14          I think it was unfortunate the way it all developed  
15 before. And part of the problem was that Mr. Doyle  
16 hadn't had a chance to look at the documents until he  
17 flew in on that Saturday before the hearings began on  
18 Monday. And we'd like to avoid that if at all  
19 possible. Not just with CYGNA, but also with the new  
20 consultants and the new people that come on board with  
21 the applicants.

22          MR. NOONAN: Okay. I understand. And I guess the  
23 only other comment I'll make is on the code case. That  
24 was filed on docket, so there should be a copy to PDR.  
25 I recognize -- might be hard to get a -- send it there.

1 I'll make be sure it is.

2 MS. ELLIS: This is one of the problems -- our  
3 problems. If you hadn't written your letter, we  
4 wouldn't have known to look in the PDR. We don't just  
5 run down to the PDR every week and see what's new.

6 And also there's no PDR in Dallas that has all the  
7 information. Some of it is sent to to UTA, but  
8 certainly not all of it. A lot of it isn't.

9 We have to go to 80 miles, one way, to Glen Rose to  
10 be able to find it.

11 MR. NOCNAN: Okay.

12 MR. BECK: Mrs. Ellis, I just want you to know  
13 that we're getting our copy of the transcript Monday.  
14 And we will be looking very carefully at your remarks.  
15 I got writer's cramp trying to keep accurate notes, but  
16 we will be giving very, very careful consideration to  
17 everything you had to say today. And we appreciate you  
18 sticking with us through this long two days, very much.

19 And I think Bill would like to respond to one  
20 question you had early on.

21 MR. COUNSIL: Well, actually it's three. You asked  
22 if I'm going to be here for the long term, God willing,  
23 I will be.

24 You also made the statement, that you would hope  
25 that the crafts get to learn who I am. And I hope also

1 they do, and I'm working on that. And I would hope that  
2 somehow in the future I could gain their trust.

3 You also mentioned something, that you hoped that  
4 the programs which we're developing here today, we  
5 talked about today, so forth, will be carrying on over  
6 in unit two, and I'm also working on that. They will  
7 be.

8 MS. ELLIS: Thanks.

9 MR. NOONAN: I guess if there are no further  
10 questions -- again I want to thank everybody for -- like  
11 John said, sticking with us for two long days. And if  
12 there are no further questions, I guess that's it.

13 MS. ELLIS: There's one more thing I would like to  
14 say for the record. I want to say again that the  
15 presentation here today and everything, I know it's been  
16 an awful lot of work. There's still a lot of questions  
17 we have, but we realize the amount of effort it takes to  
18 put something like this together.

19 And also I want to thank again the members of Mr.  
20 Noonan's staff. And we know that there's been a lot of  
21 work put in behind the scenes on all of this, to come up  
22 with the SSER 11, and all the preceding ones and so  
23 forth.

24 I know also the design adequacy problems are really  
25 sort of overwhelming sometimes. And we appreciate those

1 steps that are going on and that will be going on  
2 throughout the whole design effort or review of design  
3 effort.

4 And about procedures. Will these procedures be in  
5 place just for this review? Are they going to be there  
6 from now on? Are these going to be procedures for the  
7 site to use exactly? What kind of status will these  
8 procedures have, and what place will they have in the  
9 plant?

10 One thing too, I believe someone with the NRC, I  
11 don't recall now who mentioned that test results can be  
12 relied on in some instances. I'd like to put out a word  
13 of caution there. A lot depends on the type of tests,  
14 who did them, whether they are under fire in our  
15 hearings process, whether they have been accepted by  
16 everyone, including us. And because some of the test  
17 results are definitely still very much in question, we  
18 won't stop questioning those, of course.

19 And another aspect of it is whether or not they  
20 have been tested under all conditions. And you have to  
21 look at things like how the cycle goes, and this sort of  
22 thing.

23 So I think -- just a word of caution then. If you  
24 do rely on tests, in the event of QC, you can be sure we  
25 will be looking at those pretty closely, too. So you

1 need to be ready to answer those kinds of questions,  
2 because that's something we will be talking about.

3 Okay. In discussions earlier about NRC interface,  
4 I think that it was mentioned, John, that the NRC might  
5 want to come to examine documents. We would like to  
6 get in on some of that. I just wanted to point that  
7 out, that, you know, as I mentioned before, yesterday, I  
8 think that if we've got no other way to go, we'll  
9 definitely file whatever interrogatories request for  
10 documents, whatever, formally within the formal hearing  
11 process. It will take a little longer.

12 And eventually when you guys get down to the wire  
13 and want to get your license, you're going to be sitting  
14 there waiting on us to review documents, I'm afraid. I  
15 think you need to rethink your attitude on some of that.

16 Throughout all of the reviews that you will be  
17 doing, we'll be interested in knowing if you're looking  
18 at the FSAR commitments at the time the work was done,  
19 rather than as they currently exist. We want to be sure  
20 that you're aware of that so you will be able address  
21 that also. Because that's an issue that we'll certainly  
22 be looking at as well.

23 When you're looking at, in regard to like pipe  
24 supports or cable tray supports, or whatever, who and  
25 how will they be checked to make sure that all the



1 CMC's, NCR 's, whatever, have been incorporated? So  
2 that what you're looking at is in complete package. The  
3 whole process there will be important to us.

4 Also we'll be interested in finding out if when you  
5 did review things, if adequate calculations and  
6 justification existed when the supports or whatever's  
7 involved were first designed. And we would like to know  
8 exactly how that process will go -- will be handled, who  
9 and how it will be handled? Who will be handling it and  
10 how it will be?

11 One thing with regard to generic implications, and  
12 Billie Garde mentioned this, too. About the very minor  
13 discrepancies that you might not really be looking at  
14 them as closely as we would like for you to look at  
15 them. One of our concerns, such as mathematical errors  
16 is that in the hearings process? We have been assured  
17 that the applicants went through like nine iterations or  
18 so.

19 And it's our contention that if you go through  
20 something like nine iterations, and you have nine  
21 different people checking this, by the time you get  
22 through with it, you shouldn't have many math errors.  
23 One or two might pop up occasionally. Certainly nothing  
24 to the point of what we have seen here.

25 And we would especially like to call your attention



1 to CASE's first motion for summary disposition that we  
2 filed. And in that, we went through and pulled out,  
3 just from the CYGNA report, some errors that were  
4 pointed out by CYGNA, in percentage like 70, 72 percent,  
5 something like that, which is outrageous.

6 And this is something that we're very definitely  
7 interested in. How this could occur, went through all  
8 these different iterations, and where does that leave us  
9 as far as confidence in the rest of the plant? How does  
10 this impact on the overall competence, as far as the  
11 other things which haven't been looked at as closely, as  
12 possibly pipe support, cable supports, and so on.

13 In that regard, we would like also to find out if  
14 these discrepancies, even though you do consider them  
15 inconsequential, if they will be identified and set  
16 forth in the report similar to the way CYGNA did in  
17 their written report. And we would like to urge that  
18 they are, that they should be.

19 In regard to the cable tray supports and the pipe  
20 supports, we have some problems with some of the people  
21 which you have involved. Now when I say this, it's not,  
22 I hope that these people won't take this personally.

23 But Doctor Auti and John Fenree, I feel really  
24 are too close to the project. They have filed extensive  
25 affidavits and so on. They reviewed the pipe support

1 design area. They have been very, very closely involved  
2 with all this, to the point where even intentionally,  
3 unintentionally whatever, they have a vested interest in  
4 the outcome.

5 And we think that perhaps you should rethink some  
6 of your procedures and set up where you have them  
7 following very closely on some of these things.

8 I noticed on the cable tray supports that you're  
9 going to sample the as built in unit one and a hundred  
10 percent of the as built in unit two. We would like to  
11 know how that criteria came about? What was the  
12 criteria for making that decision, or why was that  
13 chosen?

14 In regards to the self-initiated evaluations, we're  
15 interested in where you got or will get your loads and  
16 your load combinations. Which design procedures will be  
17 used, where they came from: Are they the ones that they  
18 were designed to, or are they current procedures? What  
19 are you looking at when you're using these in your  
20 analysis or your review? And I will get to this in a  
21 little more detail in a minute.

22 In regard to concrete design, will the Richmond  
23 insert summary disposition motion that I answered,  
24 specifically, also be included in that? If so, how and  
25 who will be looking at it? And in what manner will it

1 be addressed?

2 With regard to samples, and in particular I wrote  
3 this note, was looking at the piping and supports. As  
4 far as the sampling basis, who will make the  
5 determination of how this is done? How will it be  
6 handled? What specific criteria will be used to  
7 determine the sampling, and will it be proceduralized?  
8 And, if so, what procedures and so forth?

9 And, Mr. Siskin, especially we were very concerned  
10 to hear you speak so many times of expediency. We  
11 realize the applicants are in a hurry to get the plant  
12 on the line. However, I think the overriding concern  
13 for all of us has got to be whether or not the plant is  
14 safe.

15 In addition, we're interested in, and the last  
16 thing, we'll be interested in, how it got to be in the  
17 shape it's in right now, and what shape it is in right  
18 now.

19 MR. SISKIN: I'd like to answer that one, by the  
20 way, if I might. There's nothing that I said that  
21 implied that.

22 MR. NOONAN: I can't hear you.

23 MR. SISKIN: There is nothing that we are going to  
24 do that is going to be to any standard other than what  
25 is safe. If there is two possible ways to solve a

1 problem, one by analysis and one by fix, we will  
2 probably choose the one that can be done the quickest.

3 In either case, the result will be a safe and  
4 satisfactory product. That is the only standard to  
5 which we're working. That is the only standard that  
6 TUGCO has imposed on us.

7 MS. ELLIS: Okay. As far as the design issues that  
8 are still open, I can give you an answer right now.  
9 That probably means that you're going to go through here  
10 and say on most of these, "Let's change them." Because  
11 we have had CYGNA looking at this stuff now for a couple  
12 years.

13 We have been looking at it for two and a half,  
14 almost three years. So I think that the fix, if it was  
15 fast and easy, would have already been made.

16 So I think that what you're probably going to end  
17 up with, if you take that approach, is coming in and  
18 saying that it's going to be easier just to go out there  
19 and take this support out, and do this, and to change  
20 it, or whatever.

21 I just wanted you to be aware of that. And I think  
22 that this is going to leave unanswered, a very big  
23 question that the licensing board is going to be  
24 interested in, and certainly we're going to be  
25 interested in. And that is, whether it was done right

1 to begin with.

2 MR. SISKIN: All I can answer is whether it would  
3 be right --

4 MS. ELLIS: I agree. And specifically we're  
5 interested in finding out how much you know about what's  
6 going to be known as the Walsh/Doyle allegations, and  
7 the design issues of CYGNA. How long you have been  
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2 Also -- one more question before I go on to this.  
3 In the electrical area, we'd like to know who  
4 specifically selected the AFW system. That's one of the  
5 things that we're very much interested in. And the  
6 specific criteria that was used for its selection.

7 And you will be glad to know finally, I handed Mr.  
8 Noonan today, I believe he's given copies of it to all  
9 of you, of code case which we -- our code interpretation  
10 NSR, which we came across it interpretation Roman  
11 Numeral 3-1-83-49R.

12 And what this appears to say, now I haven't really  
13 thoroughly reviewed this with Mr. Walsh and Mr. Doyle  
14 yet. Mr. Doyle hasn't seen it yet, in fact. But what  
15 it appears to say is that there is no problem with the  
16 cinchdown U bolts, because very simply you can't use  
17 torquing as a means of locking on that -- on these  
18 particular items.

19 Also it raises a question which we'll be addressing  
20 in some form at some time, regarding whether or not the  
21 applicants, when they decided to use the paint as a  
22 locking device, if you will, whether or not they did  
23 what is recommended here, which is that the user should  
24 satisfy himself with any other device than those  
25 described in F4725, is capable of acting as a locking

1 device under false surface conditions.

2 I think that's it. I appreciate you sticking with  
3 me through all these questions. I had quite a few  
4 today, and I appreciate the opportunity.

5 MR. NOONAN: Mrs. Case, I want to pick up on one  
6 thing you mentioned about the CYGNA. And you said that  
7 you worried about that we're not going to have the  
8 independence any longer. I'm just not quite sure what  
9 you mean by that. Would you explain it?

10 MS. ELLIS: Well, independent has a lot of  
11 different connotations. I guess one of the things that  
12 we have begun to believe over a period of time, is that  
13 in a way, when you have a contractor or an outside  
14 auditor coming in, I guess in a way, what they see is  
15 dependent on a lot of things. It's dependent on what  
16 they're told their mandate is to do, of course.

17 Inside that context, a lot depends on how deeply  
18 they look at things. For instance, CYGNA did not  
19 immediately identify some of the problems which were  
20 later identified in the hearings process, a lot of  
21 them.

22 For instance, when Jack Doyle started cross  
23 examining on some of the issues and said, "Have you  
24 looked at this?"

25 And they said, "No, we have to go look at that."



1           This is the sort of thing I'm talking about. From  
2 that point on, once they start getting this kind of  
3 outside information, in one way you are decreasing their  
4 independence, because they're getting feedback from  
5 other people, and these people are more or less --  
6 telling them there's a lot of things they should look  
7 at.

8           This is the aspect of independence I'm talking  
9 about. At this point in time with CYGNA, I think it's  
10 important that they have input from everybody. And that  
11 they see all of our pleadings, so that when we finally  
12 do go to hearings again, they will be able to adequately  
13 address all these things and have these resolved.

14           I think it was unfortunate the way it all developed  
15 before. And part of the problem was that Mr. Doyle  
16 hadn't had a chance to look at the documents until he  
17 flew in on that Saturday before the hearings began on  
18 Monday. And we'd like to avoid that if at all  
19 possible. Not just with CYGNA, but also with the new  
20 consultants and the new people that come on board with  
21 the applicants.

22           MR. NOONAN: Okay. I understand. And I guess the  
23 only other comment I'll make is on the code case. That  
24 was filed on docket, so there should be a copy to PDR.  
25 I recognize -- might be hard to get a -- send it there.



1 I'll make be sure it is.

2 MS. ELLIS: This is one of the problems -- our  
3 problems. If you hadn't written your letter, we  
4 wouldn't have known to look in the PDR. We don't just  
5 run down to the PDR every week and see what's new.

6 And also there's no PDR in Dallas that has all the  
7 information. Some of it is sent to to UTA, but  
8 certainly not all of it. A lot of it isn't.

9 We have to go to 80 miles, one way, to Glen Rose to  
10 be able to find it.

11 MR. NOONAN: Okay.

12 MR. BECK: Mrs. Ellis, I just want you to know  
13 that we're getting our copy of the transcript Monday.  
14 And we will be looking very carefully at your remarks.  
15 I got writer's cramp trying to keep accurate notes, but  
16 we will be giving very, very careful consideration to  
17 everything you had to say today. And we appreciate you  
18 sticking with us through this long two days, very much.

19 And I think Bill would like to respond to one  
20 question you had early on.

21 MR. COUNSIL: Well, actually it's three. You asked  
22 if I'm going to be here for the long term, God willing,  
23 I will be.

24 You also made the statement, that you would hope  
25 that the crafts get to learn who I am. And I hope also

1 they do, and I'm working on that. And I would hope that  
2 somehow in the future I could gain their trust.

3 You also mentioned something, that you hoped that  
4 the programs which we're developing here today, we  
5 talked about today, so forth, will be carrying on over  
6 in unit two, and I'm also working on that. They will  
7 be.

8 MS. ELLIS: Thanks.

9 MR. NOONAN: I guess if there are no further  
10 questions -- again I want to thank everybody for -- like  
11 John said, sticking with us for two long days. And if  
12 there are no further questions, I guess that's it.

13 MS. ELLIS: There's one more thing I would like to  
14 say for the record. I want to say again that the  
15 presentation here today and everything, I know it's been  
16 an awful lot of work. There's still a lot of questions  
17 we have, but we realize the amount of effort it takes to  
18 put something like this together.

19 And also I want to thank again the members of Mr.  
20 Noonan's staff. And we know that there's been a lot of  
21 work put in behind the scenes on all of this, to come up  
22 with the SSER 11, and all the preceding ones and so  
23 forth.

24 I know also the design adequacy problems are really  
25 sort of overwhelming sometimes. And we appreciate those

1 efforts, too.

2 And I have one more question. And that is, did  
3 Paul Chen's back finally give out from carrying all  
4 those boxes around?

5 MR. NOONAN: I don't think so.

6 MS. ELLIS: We missed him today.

7 MR. NOONAN: Fine. I guess I'm finished. Thank  
8 you very much.

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(END OF MEETING)

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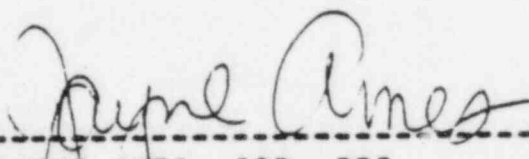
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