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UNITED STATES NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

DOCKET NO:

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

SUBCOMMITTEE ON VOGTLE ELECTRIC
GENERATING PLANT, UNITS 1 AND 2

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NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

Subcommittee on Vogtle Electric Generating Plant
Units 1 and 2

Augusta, Georgia
July 18, 1985

Present: Mr. Jesse C. Ebersole, Chairman
Mr. Glenn A. Reed, Member
Mr. David A. Ward, Member

* * *

P R O C E E D I N G S

(1:15 p.m.)

MR. EBERSOLE: This meeting will now come to order.

This is a meeting of the ACRS subcommittee on the Vogtle Electric Generating Units 1 and 2.

I am J. C. Ebersole, Subcommittee Chairman of the meeting. The other members on my right and left are Mr. David A. Ward and Mr. Glenn A. Reed.

The purpose of the meeting is to review the application of the Georgia Power Company for an operating license for Vogtle Units 1 and 2.

Mr. McKinley is the ACRS staff member for this meeting.

The rules for participation in today's meeting have been announced as part of the notice of the meeting published in the Federal Register July 2nd, 1985.

It is requested each speaker first identify himself or herself and speak with sufficient clarity and volume so as to be heard.

We have received no written comments or requests for time to make oral statements from the public.

However, we will make such time available if you ask.

I am appreciative of the large crowd we have

1 and hope we can convey to you the information you would
2 like to hear.

3 We will now proceed with the meeting. I would
4 first ask if the subcommittee members have any initial
5 questions or comments to make at this time.

6 MR. WARD: No.

7 MR. REED: No.

8 MR. EBERSOLE: I have no further opening
9 statements except that prior to the actual presentation
10 itself, we would like Mr. Hernan to make the introductory
11 remarks for the staff.

12 He will be followed by Ms. Miller to take up
13 the details of the meeting.

14 MR. HERNAN: Good afternoon. I hope you can
15 hear me. We have a little bit of a microphone problem
16 here.

17 My name is Ron Hernan. I am with the Office
18 of Nuclear Reactor Regulation.

19 I want to briefly give you our office overview
20 on where the review on Vogtle stands.

21 As you know, the staff issued its safety
22 evaluation report last month on Vogtle license application.

23 We took some comfort in the fact that this
24 plant has the same basic design as Catawba, Millstone 3 and
25 the standardized nuclear plants.

1 In our review also we looked, as we have for
2 all the recent plants for the last couple years, at the
3 Three Mile Island action program, how those requirements
4 have been implemented at this plant, as well as other staff
5 initiatives such as the action following the Salem ATWS
6 event, as well as the T D I diesel action program.

7 We feel that the safety evaluation that we
8 have issued does delve in substantially into all the issues
9 of concern from a safety stand pointed.

10 Our overall assessment is that Georgia Power
11 has done a responsible job trying to meet the NRC's
12 licensing requirements and has been generally responsive to
13 our requests.

14 We do not see any significant issues which at
15 this particular time we feel would prevent us from issuing
16 an operating license for the plant at such time as the
17 plant is completed.

18 We would hope the subcommittee would find the
19 staff has done a thorough and complete job in its safety
20 evaluation.

21 We have brought some people with us to answer
22 specific detailed questions in their respective areas.

23 However, due to budget restraints on travel,
24 the agency has to necessarily limit the number of people it
25 can bring to these meetings.

1 We would propose any questions for which we
2 don't have the technical expertise here this afternoon,
3 that we could defer it to the full committee meeting.

4 We also hope that the subcommittee can
5 complete its review during the course of this weeks'
6 meeting. We are prepared to stay late, if necessary,
7 and/or stay over on Saturday if necessary to complete the
8 review.

9 We would hope that the subcommittee could take
10 this plant to the full committee meeting in August.

11 That is all the comments I had. I would like
12 to turn it over to Ms. Miller, the project manager. She
13 will introduce the members of the staff present.

14 MR. EBERSOLE: Concerning the matter of
15 getting to the August full committee, there may be
16 complications as far as schedule problems.

17 However, I might point out that that is a
18 quite brief period between now and the time the full
19 committee meets in August, so I am not going to be too
20 enthusiastic about that. We will see how that develops as
21 we go along.

22 Is this working?

23 MR. WARD: Also, Mr. Hernan, as far as
24 completing the subcommittee's review, there are a rather
25 large number of open items. Could you tell us how that

1 compares with other plants at this stage, in the last
2 several months?

3 MR. HERNAN: My assessment based on personal
4 review of the open items in the SER is that I feel that
5 there are maybe not significantly, but relatively fewer
6 open items in this plant than say the average plant that
7 has gone through this process at this point in
8 construction.

9 I don't see any open items that would cause a
10 great deal of concern to me from the standpoint of being
11 able to come to closure with the applicant.

12 As a matter of fact, as Ms. Miller will cover,
13 a number of those open items as far as we are concerned
14 already have been closed. And if the SER were issued
15 today, would not appear as open items.

16 So I think this plant is probably in better
17 shape than the average plant I have seen from the
18 standpoint of the number of open items and the significance
19 of them.

20 MR. WARD: But you have compared the number of
21 open items with other plants at this time of construction.
22 I guess my question was, really, at this time in the
23 operating license review.

24 MS. MILLER: I have some specific information
25 on that, if you are interested.

1 MR. WARD: Okay.

2 MS. MILLER: I am Melanie Miller, Licensing
3 Project Manager on Vogtle for the NRC.

4 This week before I came I compared the Vogtle
5 SER open issues with the open issues of the three most
6 recently issued SER's. That is for Millstone 3, Nine Mile
7 Point Unit 2, and for the, what was the other one? Hope
8 Creek.

9 Vogtle compares very favorably. Compared to
10 Hope Creek, there were 15 open items, Vogtle has 14. Hope
11 Creek had 37 confirmatory issues. Vogtle has 50.

12 Nine Mile Point Unit 2 had 18 open items,
13 again, Vogtle has 4. Nine Mile Point Unit 2 had 55
14 confirmatory issues. Again, Vogtle had 50.

15 Compared to Millstone Unit 3, they had 18 open
16 items and 70 confirmatory issues.

17 So Vogtle is very comparable, if not better,
18 than the last three plants which we issued SER's for.

19 Does that give you a better feel?

20 MR. WARD: Yes, thank you.

21 MR. EBERSOLE: Could you comment about
22 percentage completion against these other plants, as well?

23 MS. MILLER: That I don't have knowledge of.

24 MR. EBERSOLE: This is 80, what, percent
25 complete? We see lots of plywood and lots of other things

1 that are in front of things that we normally like to see.
2 I think Glenn had an observation about this.

3 I guess what makes me a little nervous is a
4 bit premature. What rankles in my mind are plants like
5 Midland which the ACRS passed on, then they completely
6 folded.

7 So I think there are certain disadvantage us
8 aspects of being too soon. I am not saying this is too
9 soon. But I am a little bit, I think it might be a little
10 too soon for the full committee to see this without a
11 little digestion of this paper.

12 I don't want the ACRS's activity to be taken
13 as a ritual that occurs in time without much interest in
14 it.

15 That is my interest, that we have time to
16 absorb and think about the matters in here.

17 MS. MILLER: Okay. Before I get into my
18 formal presentation regarding the various open items which
19 are discussed in the SER, I would like to indicate that
20 there are several other NRC staff members represented with
21 me here today.

22 Ted Quay is here from the Accident Evaluation
23 Branch.

24 Kuz Campe from the Site Analysis Branch.

25 Ron Hernan has already introduced himself.

We also have some representation out of the NRC Region 2 office in Atlanta. Marvin Sinkule is here, Section Chief of the Vogtle Project Section.

Two Vogtle senior resident inspectors, Mr. Bill Sanders and John Rogge.

Lastly, a representative from the Regional Operator Licensing Section, Mr. Ken Brokeman.

Also, I anticipate Elinor Adensam will be arriving a little later this afternoon.

(Slide.)

MS. MILLER: Before I get into the specific open items I would just like to give you a brief overview of the licensing history that has taken place on Vogtle.

Construction permits were issued in June of '74 and the operating license stage review was initiated with the submittals of the environmental report and FSAR in the fall of '83.

Since that time we have issued both a draft and final environmental statement, the final environmental statement being issued in March, '85.

Lastly, we issued the SER as Ron indicated, this past June. That is really the culmination of this meeting.

In the SER the staff had detailed the findings of its review which included 14 open items, about 50

1 confirmatory issues and 11 license conditions.

2 Since SER issuance, two of the open items were
3 resolved. We now have 112.

4 Approximately five the of the confirmatory
5 issues were resolved. The results of closure of those
6 items will be detailed in supplement 1.

7 (Slide.)

8 The first open item which I have been asked to
9 address deals with the containment sump capabilities. The
10 containment sump at Vogtle is one of unique design. It has
11 four shallow sumps with a relatively small debris screen
12 size.

13 Additionally, based on simulated tests the
14 applicant ran, the approach velocities were of the order of
15 .4 to .5 feet per second which exceeds the Reg Guide 1.82
16 criteria of 0.2 feet per second.

17 Additionally, fiberglass insulation is being
18 used in Vogtle on the reactor coolant piping.

19 Based on these items which the staff has
20 discussed with the applicant and which are detailed in the
21 SER, the applicant has undertaken a reanalysis of its
22 containment sump capabilities.

23 I understand this analysis has recently been
24 completed, and staff and applicant have set up a meeting to
25 discuss the issue for July 31st.

1 So we do anticipate making advance on
2 resolution of this project, of this open item by discussing
3 the issue with the applicant, and, hopefully, coming to
4 some terms as to what we need to do in order to resolve it.

5 MR. EBERSOLE: May I ask a question?

6 MS. MILLER: Sure.

7 MR. EBERSOLE: You talk about the sump
8 efficiency, or performance.

9 How about looking downstream of the sump,
10 potential blockage areas, certainly fine and small nozzles
11 or any strainers or filtration apparatus you have for the
12 fines which escape the sump filters and run on downstream
13 and perhaps are reconcentrated in the machinery beyond the
14 sump?

15 This is or more or less a standard question.

16 But often the stoppage begins and ends at the
17 sump, itself.

18 MS. MILLER: I have talked to the staff
19 reviewer on the containment sump. He is very much aware of
20 that problem.

21 That is something we are looking into.
22 Hopefully when the applicant's reanalysis comes in and we
23 meet, we can discuss that question.

24 MR. EBERSOLE: I think the containment sump is
25 a short circuited terminology.

1 You really want a flow of sump water through
2 wherever it has to go. The notion that the problem stops
3 at the sump is erroneous.

4 MR. WARD: Melanie, a question on the sump.

5 What sort of resolution for the small area are
6 you looking for? What is possible?

7 MS. MILLER: At this particular time the
8 initial analysis we had seen was rather simplistic. They
9 were not taking credit for some things which may block the
10 flow of debris to the screen.

11 So hopefully with the reanalysis they will be
12 in a position to substantiate a better situation than we
13 had looked at.

14 At this time we are not really looking beyond
15 the reanalysis because that may solve the problem.

16 At the meeting, if it turns out the reanalysis
17 is not as positive as we would like, we can start talking
18 about what they might have to do as far as design changes.

19 MR. WARD: I guess I don't quite understand.
20 You say there is potential for foreign materials,
21 fiberglass and so forth?

22 MS. MILLER: Right.

23 MR. WARD: Being screened out or diverted from
24 the flow before it gets to the screens, is that it?

25 MS. MILLER: That's right.

1 MR. WARD: Okay.

2 MS. MILLER: Because they have some turns in
3 the containment. There are places, corners that it may get
4 blocked up.

5 MR. WARD: All right.

6 MS. MILLER: Jim, is there anything else that
7 I am missing?

8 MR. BAILEY: We will --

9 MS. MILLER: That is what they were primarily
10 looking at in the reanalysis.

11 MR. EBERSOLE: There has been none of the
12 old-fashioned plaster type thermal insulation inside
13 containment I hope?

14 MS. MILLER: I am having a hard time hearing
15 you.

16 MR. EBERSOLE: Is it true there is none of the
17 old-fashioned insulation, the material that was originally
18 plastered on?

19 MS. MILLER: From what I understand it's
20 NUCON.

21 MR. THOMAS: NUCON stainless steel cover.

22 MS. MILLER: The next open item that the staff
23 has been asked to address has to do with the toxic gas
24 evaluation of the chemicals.

25 (Slide.)

1 Briefly, the applicant has not complied with
2 the guidelines of Reg Guide 1.95, nor has it justified not
3 doing so.

4 We have a staff representative, Ted Quay from
5 the Accident Evaluation Branch, who can give a little more
6 detail on this open item.

7 Ted?

8 MR. QUAY: This issue basically is toxic gas
9 protection of the control room operators. We have three
10 chemicals we are looking at, ammonia, hydrozine and
11 chlorine.

12 (Slide.)

13 Two issues flowing out of that. Applicant's
14 proposed design and operating envelope deviates from Reg
15 Guide 1.95.

16 Deviation from 1.95 is specifically the
17 applicant's design proposes an air change rate of .5 air
18 changes per hour versus what is in the Reg Guide of .06.

19 In addition, applicant has not complied with
20 position C-13 of Reg Guide 1.78.

21 To be more specific about that, procedures
22 should reflect operator training to distinguish the smell
23 of hazardous chemicals peculiar to the area, and drills be
24 set up to ensure personnel can put on protective breathing
25 apparatus within two minutes.

1 The status of the two issues is as follows.

2 (Slide.)

3 Applicant currently has on the October docket
4 justification addressing the departure from Reg Guide 1.95.
5 Staff is currently reviewing the justification.

6 And within, I guess it is July 31, we
7 anticipate a meeting with the applicant to discuss this
8 particular analysis, and we seek closure at that meeting.

9 With reference to the second item, we also
10 have nothing on the docket at this point, but expect to
11 discuss this with the applicant at this meeting on July
12 31st.

13 Are there any questions?

14 MR. EBERSOLE: No. No questions.

15 MR. QUAY: Thank you.

16 (Slide.)

17 MS. MILLER: The next open item has to do with
18 Generic Letter 83-28 which was initiated by the Salem ATWS
19 event.

20 Applicant has partially responded to the
21 Generic Letter. That response is currently under staff
22 evaluation.

23 We are awaiting some additional information
24 from the applicant, and we anticipate that information
25 being received by the end of 1985. We fully anticipate

that this item will be fully resolved prior to licensing.

(Slide.)

Item 9 --

MR. WARD: Specifically, what items of information are missing, if you could tell us a little more about that.

MS. MILLER: Okay.

(Slide.)

This is not a very readable slide. A lot of information is on it.

The first few items indicate what the applicant owes the staff information on.

The remainder three items are what the staff is currently evaluating.

On item 4.3, applicant has committed to the generic modification in line with that item. However, we are currently awaiting some plant-specific responses.

MR. WARD: So the plant has, what is it, the A
M A X system?

MS. MILLER: I am not familiar with that.

MR. WARD: Is that what you call it? Yes.

MS. MILLER: Is that related to the automatic --

MR. WARD: The system for assuring aux feed flow.

1 MR. BAILEY: The shunt trip is what we are
2 talking about.

3 MS. MILLER: I don't know if that is the same
4 thing Dave is talking about.

5 MR. EBERSOLE: Ancillary functions that follow
6 failure to Scram is what you are talking about.

7 MR. WARD: Yes. Are we going to hear from the
8 applicant about this, tomorrow?

9 MS. MILLER: No, we weren't planing on it.

10 MR. EBERSOLE: It appears to me applicant
11 might respond tomorrow to this problem, Dave.

12 MR. WARD: Yes.

13 MR. EBERSOLE: We suggest the applicant take
14 this question, have a response tomorrow.

15 MR. THOMAS: Which specific aspects do you
16 want discussed?

17 MR. WARD: I would like to hear where you
18 stand with the items and, in particular, whether the
19 so-called, I guess what I call the A M A X system as I have
20 heard it referred to is going to be installed and operable
21 at start up.

22 MR. EBERSOLE: It's really response to the
23 Salem incident.

24 MS. MILLER: I can tell you where we are on
25 those. I can't answer to the A M A X system because I

1 don't know what that is.

2 Items 1.1 and .2 have to do with the human
3 factors. We anticipate something by the end of 1985. On
4 the ones having to do with 4.1 and 4.2, staff just issued
5 the beginning of the month some additional questions in
6 those areas.

7 Based on that submittal, applicant has had it
8 about two weeks now.

9 So allowing a reasonable time for them to
10 respond, we anticipate response, hopefully, in a shorter
11 time frame than the end of 1985.

12 Items having to do with 3.1 and .2 have some
13 regional involvements, regional review. But on those the
14 NRR review would involve statements the applicant makes
15 regarding post-maintenance and maintenance requirements in
16 their tech specs.

17 Applicant is presently finalizing its tech
18 spec submittal, so I would anticipate we could be seeing
19 response very soon to the items on 3.1 and 3.2, because
20 it's not a very detailed review applicant needs to
21 undertake.

22 As far as the staff review, maybe I can shed a
23 little more light on that.

24 This Generic Letter is being reviewed for all
25 applicants, all operating plants, and it's the sort of

5
1 thing that right now probably has the lowest priority.

2 Staff's priority goes to operating plants when
3 reviewing responses. That is why the staff may be taking a
4 little longer to review the information.

5 However, from what I understand in talking to
6 the reviewers they have indicated Westinghouse plants, they
7 intend to started the review by the end of 1985.

8 We fully anticipate resolving this by the time
9 applicant loads fuel.

10 MR. EBERSOLE: Thank you.

11 (Slide.)

12 MS. MILLER: This open item on the training of
13 emergency diesel generator personnel is one of the items
14 resolved since SER issuance.

15 It was a concern the staff had resulting from
16 NUREG 0660, TMI-2 action items. It had to do with the
17 concern the staff had about applicant being able to
18 maintain qualified personnel to work on the diesels.

19 As a result of discussions with the applicant,
20 applicant committed to having qualified personnel supervise
21 the work of personnel who are learning maintenance of the
22 diesels until they are comfortable.

23 Based on that staff finds that acceptable and
24 considers the issue resolved.

25 (Slide.)

1 On this open item, the reason it's open is
2 because the applicant has proposed not to provide cathodic
3 protection for the diesel fuel storage tanks and associated
4 piping.

5 In response to staff request for
6 substantiating information as to why this protection should
7 not be provided, applicant has undertaken a testing program
8 which they are in the process of now finalizing.

9 The testing program consisted of some in situ
10 samples being placed in the soil near the tanks. The
11 samples were metal plates having the same coating that the
12 tanks had.

13 From what I understand in talking to the
14 applicant, the preliminary results they now have look
15 favorable.

16 They plan to submit a report detailing the
17 testing program and their justifications for not providing
18 the cathodic protection to us some time in August, after
19 which time we will look over the report, and then set up a
20 meeting to discuss any questions and hopefully come to
21 resolution of the issue.

22 This is another thing. If the results of the
23 testing program turn out as favorably as applicant has
24 indicated in its preliminary results, it's not something
25 the staff considers a difficult issue to resolve.

(Slide.)

The area of licensee qualifications for operations, there were several issues detailed in the SER. Since that time, several of the issues have been resolved between the staff and the applicant.

The remaining issues are detailed here on the slide.

The first is the staff's visit to the corporate office. This is really not an issue per se in that it is a disagreement between the applicant and staff.

Rather, it's something staff normally does in its review process and is a trip which yet remains to be accomplished for Vogtle.

We do plan to visit the Georgia Power corporate office some time this fall.

The other things I will just touch on briefly.

Applicant has presently not addressed to the staff's satisfaction investigation of tech spec violations by the plant review board.

Additionally, the corporate reporting level for the independent safety engineering group, presently staff feels that reporting level is too low.

Thirdly, the applicant has not adequately addressed the independent review by a multi-disciplinary team of qualified personnel to review procedures and

1 programs that are important to nuclear safety.

2 Lastly, the staff requires additional
3 clarification as to the use of shift turn over check lists,
4 the positions for which these check lists are going to be
5 used, and the assurance that an individual such as the
6 shift supervisor will adequately ensure that the check
7 lists are being used correctly.

8 We are continuing to discuss these issues with
9 the applicant. Again, we don't anticipate a problem
10 resolving them.

11 (Slide.)

12 This open item on the retesting of simulator
13 response is again another of the open items that has been
14 resolved since issuance of the SER.

15 As indicated in the SER, applicant had not
16 fully complied with Reg Guide 1.149 regarding retesting of
17 simulator response.

18 However, since that time, the applicant and
19 staff have discussed the issue. Applicant has indicated
20 its intent to fully comply with Reg Guide 1.149.

21 Based on this commitment, the staff considers
22 the issue resolved. Right now we are simply waiting for
23 that letter from the applicant confirming what they had
24 told us in a telecon. So we don't anticipate a problem on
25 that one.

1 MR. EBERSOLE: A question of clarification.
2 This is an operation simulator, not an engineering
3 simulator.

4 MS. MILLER: Right.

5 MR. EBERSOLE: My understandings are the
6 evolutions performed are taped and put in as example
7 exercises and thus they faithfully follow the taped inputs.

8 Yet the question indicates you are looking for
9 original information. What does this mean when you talk
10 about performance testing?

11 MS. MILLER: It's performance testing on the
12 simulator once every four years. It is a detailed
13 comparison of the plant's data base with that of a
14 simulator.

15 MR. EBERSOLE: Just checking to maintain
16 continuity of relationships?

17 MS. MILLER: Right. To ensure what is being
18 done on the simulator is indeed in line with the
19 appropriate responses of the plant.

20 MR. EBERSOLE: I am merely saying the training
21 simulator doesn't generate new information, it just
22 reproduces what is put into it like any other computer.

23 MS. MILLER: Right.

24 MR. EBERSOLE: Right, okay.

25 (Slide.)

1 MS. MILLER: Also as part of the presentation
2 I have been asked to address two license conditions.

3 The first is a tech spec item having to do
4 with maximum permissible temperature mismatch between the
5 primary and secondary systems.

6 Request for this is a standard requirement for
7 Westinghouse plants. We are not doing something new on
8 Vogtle.

9 Applicant has submitted on the Vogtle docket a
10 generic analysis which has indicated that a temperature
11 difference of less than 50 degrees Fahrenheit between the
12 primary and secondary systems will not cause a problem for
13 overpressurization of the primary system.

14 Currently, staff is awaiting a plant-specific
15 analysis which will provide to us the plant-specific P O V
16 set points. We anticipate that analysis about the same
17 time as their tech spec submittal, which is expected in
18 August.

19 (Slide.)

20 The second --

21 MR. HERNAN: Excuse me. On that particular
22 one, assuming what you said is true, it would then not be a
23 license condition, correct?

24 MS. MILLER: Right. The reason it was called
25 out as a license condition is because it is something we

1 wanted to ensure applicant would do, and an appropriate way
2 or way for us to track it since it is a tech spec item
3 which will be part of the license. It's just to have a
4 checklist for the staff to ensure that it is accomplished.

5 (Slide.)

6 MS. MILLER: The second license condition I
7 have been asked to address deals with operating experience
8 on shift.

9 The purpose of this license condition is to
10 ensure staff that the applicant is maintaining and does
11 have appropriate staffing levels for operations.

12 The three bullets on the slide indicate what
13 the license condition will contain, the requirements, or
14 the levels that the applicant will be expected to meet.

15 This was really, this license condition was
16 really initiated through Generic Letter 84-16 which,
17 itself, resulted from an industry proposal having to do
18 with appropriate staffing levels.

19 From what I understand, this has been a
20 license condition that the staff has imposed on the last
21 several plant licenses.

22 So this is not unusual for Vogtle. It's not
23 something that we are asking them to do in addition.

24 MR. WARD: Ron, this six months hot participation
25 experience has staff either in this case for Vogtle or

1 other cases, audited that process at all?

2 This question came up several months ago.

3 MR. HERNAN: I would like to defer that to the
4 people from the region, since they were be the ones on
5 that.

6 MR. WARD: Has the staff audited hot
7 participation experience, let's say, particularly for the
8 Vogtle operators, to assure yourselves that this is
9 appropriate, meaningful experience?

10 MR. SINKULE: Ken Brokeman will address that.

11 MR. BROKEMAN: I am with the Operating License
12 Division, Region 2.

13 In a small part we have done, I won't call it
14 an audit, but I know licensee has taken actions in that
15 they have licensed people, and this is a unique
16 performance, at two different plants within region two.

17 If my memory serves me right at the Summer
18 plant and Farley plant we have six operators who are
19 currently gone through the entire licensing program and are
20 fully licensed to perform on the operating staff.

21 The only stipulation is that they cannot hold
22 the administrative responsibility of shift supervisor. But
23 they are operating fully in the capacity on the shift as
24 senior reactor operators at operating facilities. Does
25 that help answer your question?

1 MR. WARD: Yes.

2 MS. MILLER: I have also been asked to discuss
3 several issues that have been difficult to resolve or that
4 are now resolved. In doing that I was able to come up with
5 three issues.

6 The first two are categorized as difficult to
7 resolve because they were technical in nature, involved
8 substantial discussions between staff and applicant and are
9 very specific in nature.

10 The third is really a somewhat different
11 category in that it didn't really involve technical
12 differences between the staff and applicant.

13 Rather, it was because the applicant was
14 evolving its program as staff was reviewing it. Therefore
15 we had to go through several iterations and clarification
16 processes before the staff was finally able to accept the
17 applicant's program as presented.

18 (Slide.)

19 I am going to discuss each in more detail.
20 The first has to do with the competency of the clay marl
21 stratum.

22 The marl is a dense clay approximately 65 feet
23 thick lying about 85 feet under the Vogtle site. It serves
24 as the main bearing foundation for the auxiliary building,
25 the NSCW towers and instrumentation cavity for the

1 containment building.

2 Questions were raised by the staff mainly due
3 to the larger than expected settlement values we were
4 seeing in our FSAR review.

5 Additionally, staff noted a range of varying
6 engineering properties of the marl that were not readily
7 explained.

8 Additionally, staff was unable to review core
9 samples of the marl because they were unavailable.

10 Following several discussions, telecons,
11 correspondence on the issue between staff and applicant,
12 applicant agreed to drill six new bore holes into the clay
13 marl.

14 Cores were then made available for staff
15 inspection.

16 Staff also looked at the settlement records.
17 In doing so we were able to determine that differential
18 settlement was not a problem, and settlement has now
19 stabilized beginning about the beginning of 1985, which is
20 about what we would expect at this time because the
21 structures have been pretty much fully loaded and you would
22 expect stabilization.

23 Also as part of the resolution of the item,
24 applicant has proposed a long-term settlement monitoring
25 program in order to assess the differential settlements for

1 a period of time.

2 Staff has reviewed the monitoring program and
3 found it acceptable.

4 Right now we consider this issue resolved.

5 MR. EBERSOLE: You know I am not a civil
6 engineer, or you will when I ask the question.

7 I take it the load is translated to the marl
8 through the compacted fill above it, is that correct?

9 MS. MILLER: Yes.

10 MR. EBERSOLE: So it is first a general
11 settlement?

12 MS. MILLER: Right.

13 MR. EBERSOLE: Does that occur in the upper
14 layer of the marl itself, or does the whole marl layer
15 shed? Or do you know?

16 MS. MILLER: I would presume it would occur in
17 the upper layer.

18 MR. EBERSOLE: So it is compressible to some
19 extent?

20 MR. THOMAS: No, actually, I don't think the
21 marl, itself. It's the sands under the marl.

22 MR. EBERSOLE: So it goes through the marl and
23 goes below?

24 MR. THOMAS: Settlement is due to the
25 compression of the sands.

1 MR. EBERSOLE: So the marl actually deflects
2 as a slab, a little bit?

3 MR. THOMAS: We are talking very, very small
4 degree.

5 MR. WARD: How much are we talking about?

6 MR. THOMAS: How much are we talking about?

7 MS. MILLER: What, of the settlement? The
8 settlement we are talking about is on the order of .35 to
9 one inch.

10 MR. EBERSOLE: That is actual marl? You
11 figure it is marl movement?

12 MS. MILLER: Staff feels it could possibly be
13 the compressibility of the marl.

14 MR. EBERSOLE: However, that is always
15 intermixed, isn't it, with movement or compressibility of
16 the fill?

17 How do you differentiate when you talk about a
18 building settlement?

19 MS. MILLER: For instance, something which I
20 am going to talk about on the next item that the applicant
21 has done is standard penetration tests on the backfill,
22 itself.

23 MR. EBERSOLE: Yes.

24 MS. MILLER: They were coming up with blow
25 counts in excess of 100 blow counts, which means the

1 backfill is very well-compacted and uniform.

2 So I suppose there could be some settlement a
3 attributed to the backfill. Staff felt the marl may have
4 been a little more compressible than applicant may have
5 thought.

6 MR. EBERSOLE: Anyway, it is being monitored?

7 MS. MILLER: That's right.

8 (Slide.)

9 The second technical issue that could be
10 considered a little bit difficult to resolve had to do with
11 compaction of the category 1 backfill.

12 Applicant compacted 90 feet thick about five
13 million cubic yards of backfill. So we are talking about
14 fairly large volumes of ground.

15 The reason the staff had some concerns
16 regarding the backfill had to do with the unusually low
17 maximum dry densities which were being reported.

18 In order to resolve this staff concern,
19 applicant and staff agreed that a confirmatory testing
20 program would be undertaken. This was initiated in June of
21 1984.

22 Applicant has since completed that
23 confirmatory testing program, the results of which showed
24 that their FSAR commitments were still being met.

25 Additionally, applicant on its own initiative

1 undertook a geo-technical verification program which
2 consisted of the standard penetration test I was just
3 mentioning.

4 The results of those tests indicated with the
5 high counts that were being received, indicated the
6 backfill is uniform and well-compacted.

7 Staff is thoroughly convinced that the
8 backfill is not a problem because 100 blow counts is
9 practically beyond anything they have seen on other nuclear
10 sites.

11 That went a long way toward resolving our
12 concerns.

13 The last item --

14 MR. WARD: Going back to the marl issue again,
15 there seems to be at least possibly some disagreement
16 between applicant and staff on the cause. You have agreed
17 to a long-term monitoring program.

18 MS. MILLER: Yes.

19 MR. WARD: But what happens if the results
20 from that monitoring program are unacceptable? What if
21 there is significant settlement? What are the safety
22 implications? What are the prospects?

23 MS. MILLER: What is being done in the area as
24 far as differential settlement, the applicant has indicated
25 that, if they get to a certain slope ratio as far as

1 differential settlement, that they will look at the problem
2 and come up with resolution, so that differential
3 settlement is not a problem.

4 In other words, the slope ratio they would be
5 looking at to evaluate the problem is a sufficient margin
6 ahead of or before the slope ratio for differential
7 settlement would indeed become a problem. And, you know,
8 affect seismic category 1 structures and piping.

9 So the staff has looked at the slope ratio
10 which applicant has indicated they will evaluate the
11 problem if it does indeed become a problem, and agrees that
12 is an acceptable way to go.

13 MR. WARD: You didn't answer my question. You
14 described the monitoring program which I will accept as a
15 workable one.

16 MS. MILLER: Okay.

17 MR. WARD: My questions are, what if the
18 monitoring program reveals two years from now that settling
19 is more than expected?

20 What are the safety implications of that, and
21 what are the possible physical resolutions of it?

22 MS. MILLER: What I was trying to indicate, I
23 evidently didn't do it very well, is that the staff and
24 applicant will be evaluating this problem. And it will be
25 identified as a problem before it becomes a problem, so

1 that mitigative measures can be taken.

2 MR. WARD: Okay.

3 MS. MILLER: If it goes beyond that, I don't
4 know what we would do. It would definitely be a problem.

5 But based on what the staff has seen, for
6 instance, in looking at the clay marl samples and the fact
7 that settlement has stabilized, we really don't anticipate
8 a problem.

9 You know, the resolution of the issue has gone
10 a long way in solving the concern we have, because
11 everything came up much better than we had ever expected.

12 MR. WARD: Okay. I will wait. Is anything
13 relating to this on the agenda?

14 MR. REED: No.

15 MR. EBERSOLE: I don't think so.

16 MR. WARD: Would applicant be able to give us
17 some information on this tomorrow?

18 MR. THOMAS: Yes.

19 MR. WARD: In particular, you know, what you
20 satisfy as safety concerns, if there are any, if settling
21 becomes excessive. And what you have in mind as possible
22 fixes. I know you don't expect one and are looking
23 carefully.

24 MR. THOMAS: Really, we stabilized, and very
25 close to our estimation. We are quite convinced we do not

1 have a problem.

2 But the safety-related aspects have to do with
3 the openings where pipes come out of a building wall. The
4 size of the opening is the principal thing involved. That
5 is about all there would be, would be the connections
6 between the soil and ducts and piping entering the
7 buildings.

8 We can talk about fixes. We are highly
9 confident we are not going to have a problem.

10 MR. EBERSOLE: Do you have any nominal
11 allowance for the difference in settlement between
12 buildings per unit, per foot of distance or anything?

13 MR. THOMAS: Yes, we do. We estimate, we
14 leave openings that account for more than the settlement
15 that could occur.

16 MR. EBERSOLE: That implies you will then
17 leave a resilient fill around that.

18 MR. THOMAS: Yes.

19 MR. EBERSOLE: What is the resilient fill?

20 MR. THOMAS: You have a seal. The hole size
21 is such you will not impact the pipe.

22 MR. HERNAN: This problem is somewhat similar,
23 but certainly not as severe as the settlement problem at
24 Midland.

25 I would have to say that our safety concerns,

1 if the problem did become severe, would be the same
2 approach as we took at Midland, which involved analysis of
3 the structures --

4 MR. THOMAS: We do not have a problem anything
5 approaching that.

6 MS. MILLER: I would indicate also the
7 geo-technical reviewer on Vogtle is the same individual who
8 has reviewed Midland.

9 So he is very familiar with the situation
10 there and has indicated in resolution of both the backfill
11 issue and clay marl issue that he could defend the backfill
12 Vogtle is built on until the end of time. He has no
13 problem with it.

14 MR. WARD: The designer wasn't the same,
15 though?

16 MS. MILLER: No.

17 MR. WARD: Right.

18 MS. MILLER: That was part of the reason we
19 had some difficulty resolving the issue, because the
20 reviewer was so conservative because of what he had seen at
21 Midland, and applicant was getting frustrated because they
22 felt they had to jump through hoops in order to satisfy
23 this guy.

24 But once they did satisfy the reviewer, --

25 MR. WARD: He was satisfied despite the fact

1 that the staff and applicant seem to have different he be
2 explanations for the settlement that has been observed?

3 MS. MILLER: Absolutely. It turned out not to
4 be relevant.

5 The stabilization of the settlement, the fact
6 that he was able to actually inspect the clay marl,
7 actually see it, himself, and see that it is tight and
8 dense, and that the limestone running through it are hard
9 themselves.

10 Also, the fact that they do have a monitoring
11 program in order to provide margin, if it turns out there
12 is a differential settlement problem, that they could
13 correct it with the review and aid of the staff.

14 MR. THOMAS: May I characterize what I think
15 was an interim difference of -- possible difference?

16 We were explaining it by the dense sands
17 underneath, which in our original settlement calculations
18 we had assumed were incompressible.

19 But in fact they were a little compressible.
20 He was postulating possibly the marl itself was giving, and
21 we were contending it was the sands underneath.

22 After he saw how firm and solid the marl was,
23 I don't know that he would have had disagreement with us.
24 I have not discussed it with him since he's seen it.

25 But that was the reason for the difference,

1 explaining the little extra settlement which is very small.
2 And in other words, in our original estimates we had
3 assumed incompressibility.

4 After excavation, then, as you load it on the
5 backfill, it went back down.

6 So it was only a small amount beyond what we
7 had estimated.

8 Now, anything sitting in the backfill came out
9 within our estimate. So it is not the backfill. It has to
10 do with whether it was beneath the marl or within the marl.

11 That was the question as -- before he has seen
12 the marl samples.

13 (Slide.)

14 MS. MILLER: The last issue that could be
15 classified as difficult to resolve again is not really an
16 issue, itself, but an an entire review area, the training
17 program.

18 In the draft SER we identified 20 or 30
19 issues. In the process of the review we were finding the
20 applicant's program was evolving at the same time the
21 review was ongoing.

22 As a result we had some difficulty in matching
23 up. Things were changing.

24 Because of that we required several meetings
25 and telephone conversations to go through the iteration and

1 clarifications necessary to nail down a program the staff
2 could find acceptable.

3 MR. EBERSOLE: Thank you.

4 MS. MILLER: That is really it as far as my
5 formal presentation, unless there are any further
6 questions. Marv Sinkule, Project Chief of the Vogtle
7 Section out of Region 2 is going to talk about the
8 construction history.

9 MR. EBERSOLE: While he's coming up here, I
10 had asked for the issues difficult to resolve in the
11 context did the staff have any problems. I certainly want
12 to extend that to the owner-applicant.

13 Do you have any problems with the resolution
14 of certain issues which didn't go the way you wanted,
15 either?

16 If you care to bring those up, you can later
17 when you do your bit on the other open items.

18 MR. SINKULE: I am Marvin Sinkule, Project
19 Section Chief of the Region 2 branch of the NRC who has
20 responsibility for inspecting Vogtle.

21 (Slide.)

22 My primary job is to supervise resident
23 inspectors who are at the site. Also, to manage the
24 inspection program at Vogtle.

25 I want to spend a few minutes today giving you

1 an outline of what our program has been in the past. Some
2 on the history of the NRC inspections at Vogtle. Some of
3 the open items at Vogtle, results of our systematic
4 assessment of licensee performance, which is a formal
5 regional structure assessment, procedure. And what is yet
6 to be done.

7 MR. EBERSOLE: May I preface your presentation
8 with the following?

9 For a long time I have, I guess, tried to
10 extend the concept of the inspection process to go beyond
11 just a comparative analysis of the design drawings and
12 actual construction and following of specifications, and go
13 more deeply into the ultimate three dimensional assessment
14 of what the design was, since it's reasonably true that you
15 inspectors in the field are really the only ones who really
16 see the plant in its full three dimensional real
17 perspective.

18 Thus, you may be the first to see
19 inter-relationships of system to system in a spatial
20 context. The fact that this thing ought not be next to
21 that thing, et cetera.

22 MR. SINKULE: Yes.

23 MR. EBERSOLE: I have been hearing over the
24 years that there is a gradual increasing fraction of your
25 work dedicated to looking in perspective at the evolution

1 of the integral design.

2 As you go through here you might tell me what
3 you found that the drawings in fact didn't control, because
4 the drawings, being system-unique, really don't reflect
5 inter-system relationships.

6 If you can say anything about the things you
7 found, I think it would be interesting to us.

8 MR. SINKULE: I will do my best in that area.

9 MR. EBERSOLE: Is my question clear?

10 MR. SINKULE: It is, but the answer may not
11 be.

12 MR. EBERSOLE: The answer to this is quite
13 variable. But you know what I am trying to do.

14 MR. SINKULE: Yes. I think between Bill and
15 I, we can tell you what we do in the area.

16 MR. EBERSOLE: All right.

17 MR. SINKULE: An idea of what we do. We look
18 at these areas here, which is essentially all the
19 activities that go out there to build the plant that are
20 safety-related.

21 We do our job essentially by looking at the
22 program that the utility has to manage the activity. We
23 take detail looks at procedures, interview people, observe
24 work and review records.

25 In the last two or three years we have gone

1 more to actually observing, especially with the inception
2 of the resident program which started at Vogtle in
3 November, 1982, Bill?

4 MR. SANDERS: 1981.

5 MR. SINKULE: Bill went on site and was the
6 first resident inspector at Vogtle, primarily observing
7 work.

8 That effort, of course, is supplemented by the
9 specialists that go in the field and look in specific
10 areas. I think in construction, it's roughly 80 percent
11 done. I haven't a figure for how much work we have left to
12 do, but we think we are on schedule for this stage of
13 construction.

14 There are things left. System hydro,
15 containment. Quite a bit to do in the electrical area.
16 There is inspection work left to do.

17 Instrumentation system, fire protection
18 system.

19 (Slide.)

20 That is disregarding the work left to be done
21 on operational readiness. To give you some idea of the
22 manpower expenditures over the years, I think there were
23 some hours expended before 1975 that wasn't on our computer
24 bank.

25 So this information is what we had on our

1 computers for inspector resources by the Vogtle site.

2 It comes out with like 12,532 as of the 1st of
3 July. For this stage of construction that is probably a
4 good number.

5 I think NRC has been putting in the order of
6 20,000 man-hours per plant on plants like Watts Bar and
7 some of the others.

8 To get you an idea, you can see the numbers
9 are going up. So we still have work to do.

10 But regional management is confident we have
11 the resources to do what we need to do prior to the
12 operating license.

13 MR. WARD: Marvin, let me ask you a couple
14 questions.

15 MR. SINKULE: Yes.

16 MR. WARD: Is your inspection work
17 concentrated exclusively on safety grade systems and
18 equipment?

19 MR. SINKULE: The tendency is to look at just
20 safety grade things. And to look at things that are
21 covered by the regulations. We stress that the licensee
22 sets up a program that will ensure that things are done in
23 a safe manner.

24 And it could be that when you are looking at
25 these programs, there is not any regulatory commitments or

1 guidance to show that that program. Or, to back up, there
2 may not be guidance to ensure that that safety is met.

3 So from that standpoint, the inspectors are
4 urged to look at the overall program to ensure that the
5 loop is closed, even though there may not be a regulatory
6 requirement to ensure that the loop is closed.

7 I don't know if I am getting through or not.
8 Let me back up.

9 I would say the answer is yes. I would say we
10 could go beyond both safety-related, and include, important
11 to safety. So items that would have a relationship to
12 safety.

13 That would be beyond the strict definition of
14 safety-related.

15 MR. EBERSOLE: One of your companion utilities
16 is having a lot of trouble. I am going to try a shot in
17 the dark.

18 It happens to be with the management of
19 imbedment plates where people appeared to want to stick
20 their individual hangars on imbedment plates without
21 looking at the effect of a multiplicity of such hangers
22 hung on the same plate. Everybody forgot what the ultimate
23 strength of the plate was.

24 This brings into view such critical questions
25 as the need about regulatory control over just that aspect

1 and how tightly the regulations have to be followed.

2 Or, on the other side of the coin, what
3 happens when the imbedment plate pulls out or any pipe
4 hangar fails?

5 Do you look at that sort of thing, what is the
6 critical aspect of failure?

7 MR. SINKULE: That has been looked at at
8 Vogtle, the load bolt bearing of the imbedment plates.

9 I could refer to Bill, here. He might be able
10 to expand on that. But I would say, yes, we do look at the
11 load bearing.

12 MR. EBERSOLE: For instance, the worst
13 imbedment plate load I have got, I pull it out arbitrarily,
14 what happens, do you know?

15 I hope the pipe doesn't break.

16 MR. SINKULE: I'll let Bill answer that.

17 MR. SANDERS: Well, we are inspectors down
18 there. We don't design things.

19 MR. EBERSOLE: You don't look at that aspect?

20 MR. SANDERS: We attempt to verify the design.

21 MR. EBERSOLE: Yes.

22 MR. SANDERS: Leading back into one of your
23 other questions, the resident inspector program is designed
24 around more of observation than it is a formal module,
25 inspection module that is done out of the region.

1 MR. EBERSOLE: Yes.

2 MR. SANDERS: However, in observing any
3 requirement, we often see things that don't look right.

4 Although I am not a designer, but they don't
5 look right.

6 MR. EBERSOLE: Sure.

7 MR. SANDERS: In these cases we take it back
8 to the licensee's engineering people and get the rationale
9 for it. Or they run the numbers, or they come up with the
10 justification.

11 We have had no problem in that particular
12 area.

13 If it even goes beyond that we can kick it
14 back to the region where we have those type of experts.

15 MR. EBERSOLE: It's based on experience,
16 visual observation?

17 You can see things that shouldn't be?

18 MR. SANDERS: Some people say that.

19 MR. EBERSOLE: Right. All right.

20 MR. SANDERS: Does that help?

21 MR. EBERSOLE: I think that is far enough.

22 MR. WARD: Another question, Marv.

23 Your table showing the number of staff hours
24 per year seems to go up and down a little bit. It is not a
25 smooth curve.

1 Is that in response to what you see?

2 MR. SINKULE: No. It doesn't correlate.

3 I would say this. Generally, the numbers go
4 up, and you usually see the number on noncompliance will
5 pretty well tag along with the numbers of staff hours.

6 MR. WARD: What I am driving at, if you begin
7 to see a lot of problems, or if there is -- do you have
8 SELP evaluations?

9 MR. SINKULE: We have. Right now we are on an
10 18 month cycle. We plan on doing one six to nine months
11 before an operating license is issued.

12 MR. WARD: Where do those SELP evaluations
13 come in this schedule you show here?

14 MR. SINKULE: Well, we have got -- we did the
15 very first one on August, 1980. We did the second one,
16 June, 1981. And we did the third one on October, 1982.
17 And then we did another one on October, 1983.

18 So, and then, after that, we went to an
19 18-month cycle.

20 So we are right in the midst of doing one for
21 Vogtle right now, plus we will do another one, six to nine
22 months before the scheduled operating license date.

23 So I do not believe there is correlation
24 between the staff hours and the SELP.

25 MR. WARD: There is supposed to be, isn't

1 there? If the SELP reviews indicated a problem plant --

2 MR. SINKULE: We have not adjusted -- and I am
3 going to talk about the SELP evaluations on one of the last
4 slides.

5 But we have not reduced or increased the
6 inspection effort at Vogtle because of the SELP
7 evaluations. So they had no effect on the routine program
8 for Vogtle.

9 MR. WARD: Okay.

10 One thing we do do is, the SELP evaluations
11 are 18 months apart. Throughout the period, if anything
12 indicates we should do a special inspection, we like to get
13 team inspections. So we get four or five people together
14 so they can look over a program and put their heads
15 together and determine how well the licensee is doing.

12
16 In the last couple years we have done four of
17 those kinds of inspections. Follow-up of licensee's SELP,
18 which Vogtle did, I don't know if you plan to talk about
19 that on the agenda, but it is where they took the
20 initiative based on criteria set by INPO, went in and done
21 a SELP evaluation of their operation.

22 We had a regional team that went out and
23 reviewed that audit and concluded that they thought the
24 licensee did a very good job.

25 Then we at the region did a team inspection,

1 construction appraisal inspection, which involved about 400
2 staff hours of inspectors where we looked into controls
3 of -- essentially, a management type inspection where they
4 looked at the management's controls over activities.

5 (Slide.)

6 MR. SINKULE: The other two, mechanic and
7 welding team inspection and electrical team inspection were
8 done like the last six months or so, because we had
9 accumulated a certain number, a certain amount of concerns
10 with people calling in, telling us there is a problem here,
11 a problem there.

12 So we follow all those things up, and when
13 something sticks out in a certain area, we will put them
14 together and go out and get it with a team effort.

15 The results of all the inspections were quite
16 favorable. Where there were problems we find that the
17 licensee has identified them and taken action to correct
18 them. So we were fairly --

19 Just to give you you an idea of the
20 enforcement history of Vogtle over the years --

21 (Slide.)

22 Since Day 1 they have had about 82 items,
23 well, they have had 82 items noncompliance. These are all
24 severity levels 4 and 5.

25 Fives are essentially documentation problems.

1 Fours were in the areas of procedures, either not being
2 provided, are procedures that were inadequate, for people
3 failing to following procedures.

4 That does seem to be a pretty common problem
5 in plants under construction. My opinion is that this
6 number of 82 is probably lower than the average.

7 I pulled numbers out for a couple other Region
8 2 plants over a period of 1980 to 1985. There were plants
9 that were in construction during the same period.

10 MR. EBERSOLE: Are you saying this is
11 primarily paper problems?

12 MR. SINKULE: Well, severity level, severity
13 level 4, a paper problem I would categorize as a problem in
14 documentation. Those would be the severity level 5.

15 Severity level 4's are problems with a
16 procedure, where the procedure may not have been provided.
17 But when you looked at the work, the work was done right.

18 Or the procedure was not adequate. It may not
19 cover a specification, or, you know, something of that
20 nature. It was inadequate.

21 MR. EBERSOLE: You are telling me it is poor
22 paper, but a good product?

23 MR. SINKULE: Yes, sir.

24 MR. EBERSOLE: All right.

25 MR. SINKULE: That is, I believe, pretty

1 average, when you look at how construction goes across the
2 country.

3 MR. WARD: So you are saying the documentation
4 hasn't been all that poor, just average?

5 MR. SINKULE: Well, I am not saying that
6 either of these areas are really poor. I am saying this is
7 where we have found the problems at Vogtle.

8 This is where you will find the problems at
9 Watts Bar. This is where you'll find the problems at
10 Harris.

11 You have, of course, hundreds of procedures to
12 do these activities, referring to hundreds of
13 specifications.

14 MR. WARD: Yes. But you are the guy with the
15 experience. I'd like some judgment from you on whether
16 this is good, bad, average, worry some, or not?

17 MR. SINKULE: I would say it is better than
18 average.

19 MR. EBERSOLE: I heard him a little
20 differently, Dave. I heard him say that the product in
21 general was always good, but the paper was not always good.
22 Presumably, documented or recorded.

23 MR. SINKULE: I would say that it goes beyond
24 just documentation.

25 MR. EBERSOLE: Yes. I would say the results

1 have not resulted in a "safety-related" problem. .

2 MR. EBERSOLE: Yes.

3 MR. SINKULE: It may go beyond the procedure,
4 as such. It goes beyond documentation. But, of course, in
5 each case the situation was corrected as part of our
6 follow-up action.

7 MR. EBERSOLE: What about the two cases,
8 deviation from commitment?

9 MR. SINKULE: Those were FSAR commitment
10 deviation, and I can't answer that. I don't have the
11 answer to that.

12 I could provide that.

13 MR. WARD: Your inspection is a sampling
14 process. So for everyone of these that you find, there are
15 X number more that you haven't found.

16 Based on your experience, what is your
17 judgment about what that ratio is?

18 MR. SINKULE: I couldn't give you a guess.

19 Of course, what we find, -- find an item, of
20 course, we ask the licensee to determine whether that is a
21 generic problem in the area.

22 We ensure ourselves that, hey, that is not a
23 programmatic type problem. I mean, those questions are
24 addressed in the responses.

25 So it isn't that we are issuing noncompliance

1 and going around with our heads in the sand. Those things
2 are addressed.

3 But I couldn't give you, you know -- no doubt,
4 there are some that don't get picked up. I couldn't guess.

5 I don't know, Bill, if you want to guess at
6 that one, or not.

7 MR. SANDERS: Well, first of all, before we
8 look at it, the licensee's have a qualified inspection
9 program.

10 Before we look at it or get involved with it,
11 or find something that would require more follow-up, we
12 come behind a couple other agencies, two or three agencies.

13 If there is a finding, or a question or
14 suspicion of a finding, the corrective action is to go back
15 and follow up and review right back until you are sure of
16 what you -- that you don't have anything more of that
17 particular item.

18 It's pretty hard to put a percentage on some
19 unknown quantity.

20 MR. EBERSOLE: I don't know why it is, but
21 pipe hangars and pipe movement constraints, snubbers and so
22 forth, seem to be a popular item for allegations and so
23 forth.

24 What sort of general statement could you make
25 about the status of these items at this plant? Are they in

1 good shape?

2 MR. SANDERS: Well, we have had problems. And
3 we feel that they have been addressed properly.

4 There has been a great deal of manpower spent
5 on evaluating the problem, correcting, training of people.

6 It's been carried as an item on our books. We
7 have had any number of people look at it other than myself.

8 And supports historically in all plants, they
9 seem to be the lead item.

10 MR. EBERSOLE: Beginning with Diablo. I'm
11 sure you have kept up with the scene.

12 MR. WARD: Are there more mistakes there, or
13 are they easier to spot?

14 MR. SANDERS: It's complicated, there are more
15 pieces to it, more geometry to it. It goes in many more
16 places.

17 It's probably a little more complicated.

18 A lot of it is fanned at the site. So if you
19 had similar structures, they try to get those fabricated at
20 a manufacturer, because as we would meant of that nature is
21 a little easier.

22 But when you are trying to get the right support
23 in the right place for the pipe to go where it should be,
24 it causes you to have site engineering.

25 Then, too, the welding is in very unusual

1 positions, sometimes. You have got training of welders,
2 evaluation of welders and the welds.

3 It's just seemed to be the most complicated
4 thing that we do. And it's in such quantities.

5 I think, I might be wrong, but I think just on
6 the HVAC, there is, what, over 4000 supports just in that
7 system.

8 MR. EBERSOLE: However, if I pick one of the
9 supports and fail it arbitrarily, I don't expect the system
10 to fall down, do I?

11 MR. SANDERS: No.

12 MR. EBERSOLE: So it makes me feel comfortable
13 to feel that which way, if I know it's a fact.

14 I don't know how sensitive this is, but it
15 seems it shouldn't be sensitive to such a degree as that.

16 MR. SANDERS: Yes.

17 (Slide.)

18 MR. SINKULE: We have got a regional tracking
19 system for all the items identified in reports, which are
20 basically noncompliance items, any unresolved items that
21 the inspectors come up with.

22 Things that they identified that they want to
23 also call up on, because about 20 percent of the effort in
24 the inspection, the inspector has the option, flexibility
25 to really look at what he wants to look at.

1 So he's not guided by a rigid program. He
2 does have some time to pursue things. And those are kind
3 of inspector follow-up items.

4 But these are the kinds of things we track in
5 the region. And close-out.

6 So all those items are being tracked on the
7 Vogtle plant. At this time, there are around 130 of those
8 items that are in various stages of resolution.

9 There isn't anything on that list that we see
10 a problem with.

11 Now, I have not furnished you that list, but
12 it's follow-ups of certain noncompliance items correcting
13 procedures, follow-ups of some of the bulletins, like all
14 of the I E bulletins that have been issued, of course, are
15 being followed up if applicable to Vogtle. And will be
16 followed to completion.

17 MR. REED: Marvin, that slide had the word
18 "allegations" up there.

19 MR. SINKULE: Yes, sir.

20 MR. REED: What is the status of allegations
21 and origin?

22 MR. SINKULE: We, of course, encourage people
23 to call us if they have a problem. So people at the plant
24 or the public can call the office.

25 If they have got a problem, we list it, screen

1 it. All of them we determine if they think they are
2 safety-related.

3 Some we may turn over to the utility to follow
4 up on. Others we follow up on ourselves. That is our
5 policy.

6 Right now, I don't believe we have actually
7 turned over any to Georgia Power for follow-up.

8 Since we started our program, we have had, I
9 believe, about something like 90 of these calls. And we
10 have followed those up and closed them up. Closed them
11 out.

12 None of them have resulted in anything that
13 was safety significant.

14 Some of the the concerns are valid. It isn't
15 that some -- some are valid, some are invalid.

16 I think we have got a good system for
17 following and tracking.

18 It certainly takes a good share of our time to
19 follow those up.

20 The licensee also has a sophisticated program
21 that you will probably hear about tomorrow in the same
22 area. I think it is on the schedule. I believe we have
23 like 23 open ones right now.

24 MR. WARD: When you say the allegation is
25 valid but doesn't lead to anything significant, what does

1 that mean?

2 MR. SINKULE: Well, if the person would call
3 in and tell you that -- he may have a concern about a
4 safety, or non-safety-related system, for instance.

5 You may go out there and say, yes, he is
6 right. But there are no regulations governing this thing.

7 Or he may have a complaint against his
8 supervisor. And say, "Hey, he's really putting the
9 pressure on me to do more inspections than I think I can
10 do."

11 So you go out there and look at the work the
12 guy did, and you may conclude that, hey, he might have put
13 the pressure on, but he didn't -- I mean, these welds, for
14 instance, are good welds.

15 So that is the point I was trying to get
16 across.

17 MR. EBERSOLE: But you get a flow of
18 allegations as well as --

19 MR. SINKULE: Yes. I think the utilities get
20 more than we get.

21 See, we have got a resident at the site, so we
22 pick them up there, too. People walk in the door. We have
23 got our phone numbers on the walls at the plant, and they
24 can call us.

25 In the region, right now, we have two people

1 that are just tracking these things out and deciding who
2 ought to follow them up. So it is getting to be an
3 important part of the business.

4 MR. EBERSOLE: Do you have any allegations
5 wherein it is said that the allegation has been taken to
6 the applicant, and hasn't been resolved and they hand it to
7 you?

8 MR. SINKULE: Yes, we do get some like that.

9 MR. EBERSOLE: I would suspect so.

10 MR. SINKULE: Yes. We really -- you know, he
11 has a priority list. So we do get some.

12 MR. SANDERS: We get allegations on the
13 management of people, which is not our problem. It's their
14 problem. So these are the kind we discount.

15 We may refer those to the labor department, if
16 it is that sort of a thing.

17 MR. EBERSOLE: I see.

18 MR. WARD: Is this follow up on allegations,
19 is it included in the 12,000 hours you talked about?

20 MR. SINKULE: Yes, sir.

21 MR. WARD: It is part of that?

22 MR. SINKULE: Yes, sir. Up until a couple
23 years ago, well, up until a year ago, very little activity
24 in that area.

25 But the last year it is getting to be a more

1 important part all the time.

2 MR. WARD: What I am hearing is, you are
3 spending more time on that. Allegations, experience with
4 allegations is that they don't turn up anything worthwhile.
5 I want to come back to something you said about that that
6 bothered me.

7 Should the NRC be reviewing its policy of this
8 worry-wart follow-up on every allegation, whether it is
9 trivial or not?

10 MR. SINKULE: We are right now trying to set
11 up a worthwhile screening activity to cut down manhours in
12 that area.

13 MR. WARD: If it is detracting from inspection
14 activity that might turn up some problems, if there are any
15 problems --

16 MR. SINKULE: Yes, I guess I don't want to
17 leave the impression that they don't turn up anything
18 worthwhile.

19 MR. WARD: Let me come back, I --

20 MR. SINKULE: Because I think we have got some
21 things that have turned up things. And we went out there
22 to look and found the licensee had also picked it up and
23 taken action on it.

24 MR. WARD: I see.

25 MR. SINKULE: I don't think you can say, hey,

1 these are not valid. The licensee may have some good
2 numbers on how many of them they find are actually valid.

3 If I had to guess, I would take a guess that
4 like one out of five is valid. Or turn up something that
5 you are really interested in from a safety standpoint.

6 MR. EBERSOLE: It would appear this process
7 would lead to conflicts between the licensee and yourself,
8 where an allegation was made to the licensee and he
9 discounted it as being of no importance. And then it got
10 translated to you, and you looked at it and came up with
11 the reverse judgment.

12 Have there been any of those?

13 MR. SINKULE: I can't recall.

14 Can you, Bill?

15 MR. SANDERS: We don't coordinate our program
16 with them.

17 However, we have had occasion, I have been out
18 in the power block and had one of the craftsmen say, "Hey,
19 did they discuss this with you? I turned in a quality
20 concern. Did they discuss this with you?"

21 MR. EBERSOLE: That is what I am talking.

22 MR. SANDERS: On that note I am automatically
23 into it.

24 So I will go to Georgia Power and say, "I have
25 been contacted on this.

1 "Have you gotten ahold of it, and is it
2 resolved, or what?"

3 On that, is our relationship.

4 The other aspect, when they started the
5 program, I audited the first 100 concerns that they had.

6 And I think of those, I followed up on 40,
7 because the other 60 dealt with unavailable parking spaces
8 and working conditions and things like this that we had no
9 involvement with.

10 MR. EBERSOLE: Sure.

11 MR. SANDERS: Then, of the others, I looked at
12 those, it was still their game. But I wanted to see how
13 deep did they go, how far did they pursue the concern, how
14 thorough did they work it.

15 Since then, we have looked at the program
16 several times. Of course, it's their presentation. But we
17 feel real satisfied with their concerns program.

18 MR. EBERSOLE: Yes.

19 MR. SANDERS: But to expand on our
20 allegations, we follow every one up. As a rule, none of
21 them are just pitched aside. They all have to be followed
22 up to some conclusion if they come in on our number.

23 If they come on our number, they are logged
24 in, given a case number and handled that way until they are
25 concluded.

1 But it may be that they direct me to follow it
2 up. They may turn it over to the office of investigation.
3 Or -- and they are followed up that way.

4 Or it may be as I said before, the other
5 alternative, if it is a severe management problem, some of
6 them have been turned over to the labor department.

7 MR. EBERSOLE: Thank you.

8 MR. WARD: Marvin, you said a few minutes ago
9 that some of the allegations are valid, but you find them
10 not significant because they don't have any effect on
11 compliance with regulations.

12 I guess I'd rather have heard you say you find
13 them not significant because they don't have any effect on
14 safety of the plant.

15 MR. SINKULE: I would say that.

16 MR. WARD: Okay, you are not making a
17 distinction between the two?

18 Okay, good. Glad to hear you say it.

19 MR. SINKULE: Yes.

20 (Slide.)

21 We have done four systematic assessments of
22 licensee performance at the Vogtle plant. And I have a
23 slide which recaps the main findings in there.

24 Essentially, there were no negative findings
25 in that systematic assessment in April 1, 1979, to August

1 31.

2 (Slide.)

3 The same for the next one. Generally, the
4 four assessments done were very positive. That no areas
5 were found below category 2, which essentially equates to
6 an average.

7 And no inspections were either increased or
8 decreased because of the SELP evaluations.

9 Like I say, there will be two more on the
10 street before operating license time. One that should be
11 on the street in September, and then one six to nine months
12 before operating license time.

13 I wanted to give you an idea of the regional
14 effort remaining at Vogtle.

15 (Slide.)

16 Essentially, we talked about what was left in
17 construction. The rest of the items are primarily things
18 that we do to ensure that the plant is ready for licensing.

19 One of the items there, readiness review
20 program, you have scheduled a presentation by Georgia Power
21 on the readiness review program.

22 That is a, quote, extra effort from the NRC
23 side of the house, because it is something special that
24 Vogtle is doing to ensure the plant is ready for operating,
25 operations.

16

1 NRC is putting like ten man-year effort into
2 looking what Georgia Power has done in that area.

3 This involves people from NRR and the region
4 and I & E headquarters.

5 MR. WARD: I heard you say you are putting ten
6 man-years into this?

7 MR. SINKULE: Yes, sir. They are going
8 through and rereviewing from day one all their commitments,
9 and they are rereviewing the program to meet those
10 commitments.

11 And also rereviewing the records to verify
12 that the commitments have been met.

13 So it involves extensive man-year effort on
14 Georgia Power's part.

15 I don't want to steal their presentation,
16 because I think it is actually after this. And they are
17 going to talk on just that thing.

18 But it is, from the NRC side of the house,
19 kind of an extra thing. We are trying to phase some of our
20 ongoing inspection items into it, especially for
21 operational readiness.

22 But as far as construction things, it is
23 pretty much of an add-on.

24 MR. WARD: I guess I am a little surprised to
25 hear you. You are describing this a little casually.

1 It's kind of an add-on thing for the NRC, but
2 the NRC is investing ten man-years in it.

3 MR. SINKULE: Yes, sir.

4 MR. WARD: I mean, there is some research
5 programs in the NRC, that the NRC has declined to fund
6 which don't cost any more than that, which have been cut
7 back because of budget limitations.

8 MR. SINKULE: I think it has to do with, of
9 course, the NUREG quality assurance program for
10 construction plants where they had recommended that the
11 NRC, of course, investigate new ways of doing the
12 inspection effort.

13 And so, you know, this -- and it involves a
14 phased in approach to licensing.

15 And so the reason for the large man-year
16 expenditures is the NRC is looking at it from the
17 possibility of factoring it into future programs. And it's
18 being billed as a pilot program.

19 MR. WARD: So you don't see this as something
20 necessary for Vogtle; but, rather, as an opportunity for
21 the NRC to look at a different way of doing things?

22 MR. SINKULE: Yes, sir.

23 MR. WARD: It's still pretty expensive.

24 MR. SINKULE: That was an estimate.

25 MR. WARD: Oh, it's going to be more than

1 that.

2 (Laughter.)

3 (Slide.)

4 MR. SINKULE: To summarize the regional
5 position, the inspection programs are on schedule. We
6 don't anticipate follow-up of any of the open items that
7 are currently on the books to be a problem. Licensee is
8 responsive to the NRC findings.

9 We think that the licensee does a thorough
10 evaluation, that is a mistake, it should be evaluation, of
11 deficiencies that are found.

12 I will add to that, corrective action.

13 We believe they have implemented adequate
14 programs to ensure that the plant is constructed in a
15 quality manner.

16 And I guess at this time our operating license
17 recommendation, of course, is contingent on the work we
18 have left to do, which is pretty extensive.

19 MR. REED: We hear a lot about adequate
20 quality assurance.

21 In your experience from the region where you
22 look at a number of plants, would you say that the quality
23 assurance program is here more oriented toward paper, or
24 toward hardware in place, as compared with the other
25 plants?

1 You are saying, you are saying this is a good
2 program. But is it heavily documented and heavily paper
3 loaded?

4 MR. SINKULE: Well, it is, compared to -- not
5 any more than other plants. But I think it is oriented
6 towards quality of the plant.

7 MR. REED: So you would say that the paper is
8 accomplishing the purpose?

9 What I am striving at is, oftentimes we here
10 about flawed paper, but we don't know how <KWAEUT> that
11 relates to flawed equipment in place. The paper is lacking
12 signatures and dates, or other aspects.

13 I guess if you have got a good program here,
14 the paper is tracking the quality in place. The signatures
15 and --

16 MR. SINKULE: That is what is intended, yes.

17 MR. REED: I guess I will ask again. Do you
18 think--this one you say is a good program.

19 Do you think there is more paper here than
20 other plants you have seen come along the line? Or it's
21 just better carried out paper, so that they are tracking,
22 paper is tracking real quality?

23 MR. SINKULE: Well, I guess the reason I draw
24 the conclusion that we think they have got good programs is
25 because of the management involvement in the control of the

1 activities. And in correcting and evaluating problems when
2 they are found.

3 Paper is part of the program, because it
4 tracks when deficiencies are found and actually what is
5 done.

6 So I don't think you could say that they had a
7 good quality assurance program and no paper. I think the
8 two go together. That they go together.

9 I don't know if I am answering your question.

10 MR. REED: Well, I keep searching for whether
11 paper is more the quality in position, and whether paper
12 assures that.

13 MR. SINKULE: No.

14 MR. REED: I think that is enough of a
15 response. I don't see that you have come up with any
16 observation, any difference between Vogtle and the other
17 plants in the region where we are perhaps experiencing
18 problems.

19 MR. SINKULE: Well, yes. I have been
20 associated with one other plant in the region. And as far
21 as quality control of activities, I feel Vogtle is better
22 than that plant. And so I guess I couldn't go beyond that.

23 That is all I have prepared.

24 MR. EBERSOLE: Any further questions?

25 Thank you very much. Appreciated that

1 presentation, Mr. Sinkule.

2 We are doing so well on the schedule, I am
3 going to take an opportunity to have Mr. Tim Johnson come
4 up. He has five minutes to make an oral statement about
5 some problems about the newspaper response.

6 Mr. Tim Johnson.

7 MR. JOHNSON: Thank you.

8 MR. EBERSOLE: I should have said he
9 represents the Campaign for a Prosperous Georgia. Sounds
10 like a meritorious organization.

11 MR. JOHNSON: Thank you, and thank you for
12 allowing me to speak.

13 The concern I had was not with the newspapers,
14 but with the lack of notice of the meeting. We are an
15 intervenor in the licensing process and have been formally
16 accepted as an intervenor.

17 The only way we found out about the meeting
18 was one of our members in Augusta sent a photocopy from the
19 newspaper last week which mentioned this was going to
20 occur.

21 But we were never sent formal notice.

22 When I called the regional office and
23 requested it, after talking to about a half dozen other
24 people, I finally got through to one who said, yes, the
25 meeting was happening.

1 When I asked what would happen at the meeting
2 he said the subcommittee would hear presentations from the
3 applicant and staff.

4 And I asked if intervenors could not also make
5 a statement. That wasn't until Monday of this week.

6 And he said, "Yes, provided it addresses
7 specific issues on the agenda."

8 I asked what the issues were on the agenda and
9 he said he would mail one.

10 I got the copy Tuesday. It was a press
11 release and did not tell what was in the agenda but
12 mentioned it had been in the Federal Register on July 2nd.

13 So I went to the library and copied the
14 notice, which also did not mention the agenda.

15 Yesterday, finally I called the staff person
16 who was mentioned in the Federal Register notice at the
17 phone number in Washington and was told that he would be
18 out of town until August.

19 I see he is here today. I guess that is why
20 he was out of town.

21 They read me over the phone the agenda, but it
22 wasn't until yesterday afternoon.

23 We would like to present written comments on
24 some of the items on the agenda; and I would like to
25 summarize some in advance of that, right now.

1 MR. EBERSOLE: But your major issue was you
2 were delayed in getting notice of details of the meeting?

3 MR. JOHNSON: Right. Essentially we were not.
4 We had to make a particular effort.

5 MR. EBERSOLE: Is there not some formalized
6 process of getting notice to intervening groups that these
7 things are going to take place?

8 John?

9 MR. MCKINLEY: These meetings with the
10 Advisory Committee on Reactor Safeguards are not part of
11 the formal public hearing process. We do know it. They
12 are open to the public.

13 But they are not part of the hearing process
14 where the utility and the NRC and the intervenors exchange
15 testimony and cross-examination.

16 There will be a public hearing, I believe it
17 is scheduled to begin in November.

18 Has that been postponed?

19 MS. MILLER: No schedule has been established.

20 MR. THOMAS: Let me mention, a formal request
21 has been made to the Atomic Safety and Licensing Board to
22 begin hearings on November 19 of this year.

23 MR. MCKINLEY: The parties to that hearing
24 will be served all of the papers related to that.

25 Proceedings of the ACRS are not part of that;

1 and, therefore, we do not make an effort to serve notice on
2 all of the parties.

3 MR. JOHNSON: Yes, sir, I understand it is not
4 a part of the licensing process.

5 However, the ACRS does make recommendations to
6 that board in that licensing process.

7 MR. WARD: No.

8 MR. JOHNSON: It does not?

9 MR. WARD: We make recommendations to the
10 Commission.

11 They are available to the board for their use.

12 MR. JOHNSON: I think the committee would be
13 well-served by receiving points other than those merely
14 from applicants and staff. I would suggest you do that in
15 future proceedings with other plants.

16 MR. WARD: I think it is a good point. We do
17 count on the notice in the Federal Register.

18 MR. JOHNSON: But it costs \$300 a year to you
19 be subscribe to the Federal Register. Many intervenor
20 groups cannot afford --

21 MR. WARD: You are saying that is not a
22 practical way to spread the word.

23 MR. JOHNSON: If there are groups of formal
24 intervenors with a particular plant, and there is going to
25 be a hearing in the town near the plant, it wouldn't, I

1 think, be very difficult to send them notice along with the
2 Federal Register.

3 MR. EBERSOLE: Right. And you had other
4 matters, too?

5 MR. JOHNSON: Yes, sir. Thank you, very much.

6 One thing that I think is very important, and
7 I think one of the members was addressing that, is to not
8 misread what the so-called readiness review program is.

9 In fact, if you go back and read you will
10 discover that the Department of Energy had been urging that
11 Georgia Power and other utilities take this as part of the
12 Reagan Administration's goal of so-called licensing reform
13 for so-called whistle blower allegations.

14 That is what this is for, to resolve issues
15 early in the process.

16 Then workers at the plant come forward and
17 say, "Well, this wasn't solved."

18 Then the long-range goal says we can't address
19 this now because it was addressed earlier.

20 We have within the last two weeks been
21 approached by former workers who described the readiness
22 review program as pencil whipping.

23 So I think my question about whether it is a
24 paper program or hardware program is very appropriate.

25 Those workers said they have been told over

1 and over for the last two years never to talk to
2 intervenors in the licensing process.

3 They said they had taken their complaints to
4 the regional office of the NRC, and more than one case they
5 were told that the NRC does not have the staff to come make
6 inspections of worker complaints.

7 In some of these cases, there appeared to be
8 very significant concerns. I hope you will follow up on
9 it.

10 Just this morning I came down early to meet
11 with two of these former workers at the plant. They gave
12 me some specifics that I will in outline form read very
13 quickly.

14 And they promised to provide more details to
15 me in the future. I will certainly forward that to the
16 committee.

17 These include the -- they said that the
18 containment Unit 2 reactor vessel was removed from storage
19 and put in a position such that it accumulated
20 approximately 150 gallons of water.

21 According to these workers, that that is a
22 violation of ANSI 454.2 concerning receipt, storage and
23 handling of items for the power plants.

24 And that regulation requires that the vessel
25 remain dry at all times during storage and prior to

1 construction.

2 They said that resulted from poor planing and
3 removing it from its storage before they were really ready
4 to put it in place.

5 They said that the welding assemblies used are
6 not coherent and that they don't meet the American Welding
7 Society specifications. They say they would provide copies
8 of that.

9 They said the coatings on domes does not apply
10 per the procedures.

11 Some of this, I apologize, I don't know what
12 some of it means so I will read it. Hopefully they will
13 provide the details.

14 On that, it says inspector's data for humidity
15 factor and temperature does not correlate with other
16 inspectors' data on particular days that they said they
17 would provide.

18 It says if there is an accident, either of the
19 containments releasing excessive heat, it will result in
20 the coatings appealing.

21 And they were applied in less than optimum
22 conditions.

23 Then they said large redheaded female
24 inspector who was not allowed to inspect the area, how she
25 had brought some of these problems out.

1 They told her that she shouldn't have done
2 that.

3 But she is still working there and some of the
4 workers observed this occur.

5 The tendon galleries they said are required to
6 have a rabbit pulled through them to confirm clearance, and
7 several of the rabbits are stuck, due apparently either to
8 damage or unknown obstacles.

9 They said the design of the cooling towers
10 could result in a domino effect in case of an accident.

11 That the --

12 MR. WARD: Could you tell us what cooling
13 towers they are referring to?

14 MR. JOHNSON: I assume they mean the large --
15 I do not know.

16 MR. WARD: There are two sets. It is
17 important, I think, to know which it is.

18 MR. JOHNSON: I will put a note to find that
19 out.

20 They said the heat affected zone, the
21 inspections to welds do not include proper inspection of
22 the heat affected zones. They believe that is not in
23 compliance with the regulations.

24 They said that a particular individual placed
25 rejected concrete during a pour, knowing it was rejected.

1 They said their understanding was that the NRC
2 then said he could no longer hold an authoritative position
3 on site, and he was transferred off-site.

4 But since, according to the former workers, he
5 has returned to the site and is now head of systems
6 turnover.

7 They said the on site rebar fabrication, they
8 used so many pins, diameter of the pins is such,
9 fabrication is such that there is a flame cut on the edges
10 making it very uneven.

11 They think they all are at least a quarter
12 inch off and that there might be violations of the concrete
13 Steel Reenforcing Institute specs on that.

14 They said the iso-phase drawings, that there
15 are designers there. But I understood from them that there
16 was a halt on that and deviation report. In particular,
17 there are 120 welds there that are in question.

18 That the manhole hatch covers, the manholes
19 and hatch covers were made different sizes, so they didn't
20 fit. So they have to go back and re-do that.

21 They said that is an example of improper
22 planing and general incompetence.

23 They gave me a photocopy of a handwritten memo
24 that says from Terry to Harry. My understanding is that
25 Terry is, I believe they said, the head of quality control,

1 or head of one of the divisions in quality control. Harry
2 refers to Mr. Greggory, manager of the project.

3 In this handwritten photocopy of the memo, it
4 says that the company should allow only company employees
5 to be put in supervisory or quality control positions
6 because of their loyalty to the company, and that they
7 should not put contractor's employees in such positions
8 because they are not loyal to the company.

9 I will supply you with copies of that.

10 Again, I thank you for allowing me to make
11 this oral statement. I will provide written comments. I
12 urge you to please follow up.

13 MR. EBERSOLE: They are using you as a
14 clearing house for numerous allegations, apparently.

15 I guess my question would be, we heard awhile
16 ago, the staff is also a receiver of these, as well as
17 applicant.

18 Eventually, I guess, the question is, have
19 these come around to you, as well, and to the staff?

20 Thank you, very much. We will follow up.
21 These matters are on record, of course.

22 MR. JOHNSON: Thank you.

23 MR. EBERSOLE: We are currently running on
24 schedule quite well.

25 Let me call a recess for 15 minutes.

1 Be back at 3:30, at which time the licensee
2 will be in the presentation.

3 (Recess.)
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1 MR. EBERSOLE: We want to reconvene the
2 meeting.

3 I think at this time we go into the licensee's
4 discussion of certain open items.

5 MR. BAILEY: Correct. My name is Jim Bailey,
6 Vogtle Project Licensing Manager. I work with Southern
7 Company Services. My home office is in Birmingham,
8 Alabama. But I spend the biggest portion of my time here
9 at the job site.

10 As you know, the SER contains 14 items. I am
11 going to address, briefly describe the items Ms. Miller did
12 not discuss.

13 The first one on the list is the fire
14 protection item, item 7.

15 It had two parts to it. One was lack of UL
16 rating on special purpose doors and some dampers.

17 The second part was location of supplies for
18 safety shutdown ventilation equipment.

19 We want to postpone any talk on this until
20 tomorrow when the item on fire protection system comes up.
21 And we will include it in that item.

22 The same holds true for item 8, safe and
23 alternate shutdown capability. We will discuss that also
24 tomorrow in the formal presentation of the fire protection
25 system.

1 Item 1 was equipment qualification. It
2 basically had three parts to it. One was seismic
3 qualification; one was the environmental qualification; and
4 the third part was really the pump and valve operability
5 program.

6 The seismic issue, the NRC staff has basically
7 agreed with our program, subject to the confirmation of the
8 items discussed at the site audit, which is now scheduled
9 for October, 1985.

10 We really don't feel there is any problem
11 there. But they will, once we have demonstrated the
12 adequacy of our program add this audit, they will close-out
13 that issue.

14 For the environmental issue, the staff earlier
15 in January of this year requested some additional
16 information. It was when the 10 CFR 50.59 rule came out.

17 This dealt mostly with the qualification
18 requirement for electrical equipment in harsh environment.

19 We are addressing that issue, and plan on
20 submitting the additional information requested in August
21 of this year.

22 Staff said that they would review this
23 additional information and at the site audit, verify the
24 issues, verify the issues that we have talked about.
25 Again, we don't feel this is a problem.

1 This audit is presently scheduled for January
2 of 1986.

3 The last item on the pump and valve
4 operability assurance had to do with some aging and
5 sequence of environmental conditions and pumps affected by
6 static shaft analysis.

7 We have submitted information on this to the
8 NRC, and it's presently under review. And they will
9 complete the review of this at the site audit, January of
10 1986.

11 Open item 2, preservice inspection program.
12 This item concerned basically three different issues.

13 One was the ultrasonic testing cast stainless
14 steep piping.

15 The second was the requirements in Reg Guide
16 1.150 as it is related to the reactor vessel inspection and
17 the preservice inspection relief request.

18 Again, we have a special presentation on this
19 tomorrow. These items will be discussed.

20 Open item 6 was the emergency response
21 capability. It was basically addressing of Reg Guide 1.97
22 revision 2.

23 Early on we developed design basis, along with
24 the support of Westinghouse and Bechtel, to come up with a
25 design basis for Vogtle to address the criteria spelled out

1 in this regulatory guide.

2 We submitted that to the NRC, and we have been
3 under discussion with them.

4 In a letter on June 20, we submitted further
5 justification for some deviations that we feel like, based
6 on our design criteria, will justify.

7 We ended up with about five. And based on the
8 Vogtle-specific design basis, we feel like that we meet the
9 intent of the regulatory guide.

10 NRC just didn't get the information in time to
11 review it and get it in the SER.

12 Item 13 concerns the emergency preparedness
13 issue. Late last year we submitted some revisions
14 revisions to our emergency plan. NRC under their review
15 had numerous questions on it.

16 We met with them in February of this year,
17 discussed the issues, and, in addition, the NRC staff came
18 to the site in late April for a site visit, where we went
19 overall of their concerns at the site.

20 Okay, in mid May we submitted a revision to
21 our emergency plan, this is the on site emergency plan,
22 that addressed the concerns the NRC staff had, and it just
23 didn't get in in time for them to include in their
24 evaluation and the SER. It is now under review by the NRC
25 staff.

1 The last item is item 14. It's human factors
2 engineering items. It concerned basically two issues,
3 detailed control room design review, and safety parameter
4 display system.

5 Again, this item will be addressed tomorrow
6 when we go through control room design. We feel like all
7 of these issues are under control.

8 MR. EBERSOLE: Any questions of Mr. Bailey?

9 Mr. Bailey, -- go ahead.

10 MR. WARD: You did say tomorrow, Jim. You are
11 going to talk about testing of cast stainless steel?

12 MR. BAILEY: Yes. That was one of the
13 questions, wasn't it, on the agenda?

14 MR. THOMAS: We can cover that when Bud
15 speaks.

16 MR. BAILEY: It may not be on your agenda. We
17 had it on our agenda.

18 MR. WARD: All right.

19 MR. EBERSOLE: Any further questions?

20 Mr. Bailey, you have in about 12 minutes
21 covered what was supposed to consume about an hour.

22 MR. BAILEY: Yes.

23 MR. EBERSOLE: So I guess the thing to do is
24 jump into the readiness review.

25 And, if we have spare time available, consider

1 how to use the time until 5:30 to economize on time
2 tomorrow.

3 Let me ask applicant to consider what we might
4 do today, including my question list.

5 MR. BAILEY: We have Bill Ramsey, manager of
6 the Readiness Review Program.

7 MR. RAMSEY: Thank you.

8 (Slide.)

9 Gentlemen, I am Bill Ramsey, Manager of the
10 Readiness Review Program on the Vogtle project.

11 Today I would like to highlight some of the
12 process, some of the results to date, some of the
13 organization that we have for this program.

14 I am an employee of Southern Company Services,
15 Manager of the Nuclear Project Section there.

16 (Slide.)

17 First, let's address background behind this
18 program. I think we are all aware of the historical
19 problems that we have experienced of recent on the other
20 NTOL plants, a number of which I could highlight and you
21 are familiar with.

22 A number of the problems were addressed in the
23 staff report to Congress, NUREG 1055, regarding Congress'
24 question, why had the NRC and utilities failed or been slow
25 to recognize the quality problems with regard to the

1 project.

2 (Slide.)

3 We all know that both the applicant and NRC
4 have had in place a number of programs for a number of
5 years in attempting to address the needs of licensing of
6 projects.

7 Among those that Georgia has had in place and
8 has conducted on the Vogtle project is the INPO evaluation
9 as part of the INPO construction project program. Vogtle
10 volunteered and was one of the pilot programs in that area.

11 They also participated through introduction of
12 self-initiated evaluations. Other special internal audits
13 such as have been performed in our engineering organization
14 in the past by independent teams. By our own internal
15 teams, by various special management appraisal efforts to a
16 assess our performance and follow-up.

17 If we look at the NRC actions we see they have
18 had, of course, their regional and resident inspector
19 actions. We have had the head quarter and regional
20 inspection teams, the CAT teams, IDI's. And we have had
21 the third party, independent third party reviews.

22 Results of that as indicated in NUREG 1055
23 report, staff report to Congress, was that more of the same
24 won't necessarily fix the problems that we have in the
25 industry today.

Explored in the report was concept of readiness review used in other complex projects, in particular the aerospace industry.

Georgia Power Company took that concept. They developed it for use on a nuclear power plant. That is what we have in our program.

(Slide.)

In developing that program they set a couple objectives. That was that the program must be Georgia Power Company's own program, to provide additional assurance to management the quality of the project, additional assurance to management that we had a plant the design was adequate on.

That it was safe for operation. That we were ready for operation and that the health, public health and safety was adequately protected.

To be a complete program to accomplish what what we hoped it would accomplish and overcome some of the problems we were seeing on other plants, it required NRC participation to review and acceptance of that work we had done.

MR. EBERSOLE: Let me ask a question about the chronology of the formation of this program.

MR. RAMSEY: Yes.

MR. EBERSOLE: And where you would optimize

1 the beginning of such a thing.

2 I think of Midland as being a terrible example
3 of where things went off the deep end. And when in a
4 chronological sense one has to do things to forestall those
5 financial and critical disasters.

6 MR. RAMSEY: In my opinion this type program
7 would have been more effective were it any initiated
8 considerably earlier.

9 MR. EBERSOLE: Then it wouldn't be called
10 readiness, would it?

11 MR. RAMSEY: We could come up with a number of
12 names for it.

13 MR. EBERSOLE: This implies I am close to
14 doing something, like operating. And it would be too late.

15 MR. RAMSEY: That is true in that context,
16 yes, sir.

17 MR. EBERSOLE: So it still, then, doesn't
18 answer the congressional question of how we are going to
19 forestall things like Midland.

20 MR. THOMAS: May I suggest that I think what
21 we visualize is that you would do something like this early
22 on in a project, on a programmatic basis, looking to see
23 that you had a solid program for accomplishing to meet your
24 commitments.

25 MR. EBERSOLE: Yes.

1 MR. THOMAS: And associated disciplines on
2 your procedures.

3 You would do another down the line. So they
4 are not exclusive.

5 MR. EBERSOLE: So you would see something in
6 front of this.

7 MR. THOMAS: Yes.

8 MR. EBERSOLE: Okay.

9 MR. RAMSEY: One point would be a repeated
10 process where we are, because of the status of the project,
11 going through and taking a one-time cut at it at this
12 point.

13 MR. EBERSOLE: Yes.

14 MR. RAMSEY: To accomplish this, Georgia Power
15 Company formed an off-project team to accomplish the
16 program.

17 (Slide.)

18 That off-project team organization is shown
19 here. Let me speak to that very briefly.

20 Speaking to the bottom line, people who are
21 making it happen. Those people are all pulled from the
22 Georgia Power Company/ Southern Company Services
23 organization.

24 Those people, with one exception which I will
25 address in a moment, senior engineers, line management

1 people within the -- such as myself, within Southern
2 Company and Georgia Power Company.

3 The one exception being the block off to the
4 right, independent design review group. That group is
5 totally independent of having performed the work on the
6 project. Their responsibility is to review the technical
7 adequacy and technical implementation of commitments.

8 We have, Georgia Power Company has secured the
9 services of Stone and Webster for that. Stone and Webster
10 has a technical program manager who reports to me who is
11 stationed at the site.

12 One other aspect I would like to point to is
13 the Readiness Review Board, which is composed of senior
14 managers, executives from Georgia Power Company, Southern
15 Company Services, Bechtel, Stone and Webster Engineering
16 Corporation.

17 MR. EBERSOLE: This puts AE's in competitive
18 positions, doesn't it?

19 MR. RAMSEY: Yes, sir.

20 MR. EBERSOLE: And that is what you wanted to
21 do, isn't it?

22 MR. RAMSEY: Yes, sir.

23 MR. EBERSOLE: Okay.

24 (Slide.)

25 MR. RAMSEY: To start this program off, we

1 basically went through and identified the generic
2 functional areas on the project. Those we expect to fall
3 out.

4 Then we took those and went a step further.

5 MR. EBERSOLE: I am a little concerned. I
6 didn't see system integration.

7 MR. RAMSEY: We will get to that.

8 MR. EBERSOLE: Okay.

9 MR. RAMSEY: If you will allow me.

10 (Slide.)

11 We went through, took the generic areas and
12 divided them up into work areas that were divided easily
13 along the lines of the nature of design that would occur.
14 In some cases, construction work that was more
15 appropriate -- management segments on the project. Those
16 we call modules.

17 As a part of our lessons learned in going
18 through the pilot program, this, among other things, keeps
19 getting tweaked with, keeps getting adjusted, refined and
20 polished.

21 One additional lesson we learned as we started
22 this program is that we were ending up with a good deal of
23 redundancy between modules.

24 (Slide.)

25 To address that area, we are preparing a

1 number of general appendicies which address the area common
2 to the modules, prevent redundancy.

3 The specifics of each of these issues as
4 related to the module would be treated in the module with a
5 general process treated in these.

6 (Slide.)

7 One of the ingredients to do this, as I
8 indicated earlier, was NRC's review and acceptance of this.

9 Both from a manpower standpoint and ours, we
10 needed orderly release and preparation of those modules.

11 Basically, our original concept, one we still
12 operate with, is to prepare, or complete preparation and
13 submit to NRC one of those modules on a two-week interval.
14 Completion of that effort, mid March of 1986.

15 We will speak to the finer schedule later. I
16 have a slide on that.

17 (Slide.)

18 The process that we go through. Let me speak
19 to that to you. Basically a four-part process.

20 It's module preparation; self-assessment by
21 the project of that; NRC review; and then as a result of
22 their review, any problem resolution and work acceptance.

23 Let's treat each of those as an issue as we go
24 through, touch them briefly.

25 (Slide.)

1	Module preparation.
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2 MR. EBERSOLE: A module is sort of a
3 semi-homogeneous work area, isn't it?

4 Is that what you would call it?

5 If I pick a module out, what would you call a
6 module? What characterizes a module?

7 MR. RAMSEY: Let's back up to the slide that I
8 had. I am sorry. Am I going too fast?

9 The 20 issues I showed you.

10 (Slide.)

11 Those were how we divided the work areas of
12 the project into a management group.

13 MR. EBERSOLE: Yes.

14 MR. RAMSEY: Those are not quite the correct
15 titles we are putting on them as we refine them.

16 Basically, those are the modules that will be
17 submitted.

18 MR. EBERSOLE: You mean the four blocks?

19 MR. RAMSEY: These individuals.

20 MR. EBERSOLE: Each slot.

21 MR. THOMAS: Use concrete as an example and
22 tell the status. Concrete rebar cad welds.

23 MR. RAMSEY: It's something that works
24 together, and reasonably you can divide it --

25 MR. EBERSOLE: I am with you.

1 MR. WARD: In each of these modules are you
2 talking about only safety grade equipment structures?

3 MR. RAMSEY: Yes. The only other structure,
4 those that would have potential impact, such as the
5 seismic --

6 MR. THOMAS: Classic 2 over 1. That type of
7 thing.

8 MR. RAMSEY: Yes, that type of thing. That is
9 good.

10 (Slide.)

11 In the preparation of a module we are
12 conveying and examining as a result of our assessment
13 process certain certain pieces of information to those who
14 review it.

15 Of interest, these are the key points covered
16 in a module --

17 MR. EBERSOLE: Let me ask you, how is it a
18 module can be said to be backfill, coatings and
19 post-tensioning. Those seem to be such diverse topics.

20 MR. RAMSEY: Those are. That is a good point.

21 There are cases of about two or three in there
22 that did not appropriately fit the others. So that is like
23 three mini-modules in one reasonable sized work document.

24 MR. EBERSOLE: I see.

25 MR. RAMSEY: Okay.

1 We provide a description of the organization
2 and the responsibilities of various organizations involved
3 in the work scope covered in a module. We identify the
4 commitments.

5 That is an extensive part of the process we go
6 through. We have been through the FSAR, responses to
7 notices, letters, formal letters going to the NRC, and
8 identified in those the commitments.

9 Against those commitments in the section of
10 the FSAR, the result of this review, in the module you will
11 find the document that actually is the primary implementing
12 document on the project, be it a design criteria, purchase
13 specification, a procedure.

14 You will actually find listed in this report
15 the first implementing document for that commitment, and
16 the current document and the fact that it is in there.

17 We have reviewed those documents against the
18 FSAR to assure ourselves that we are indeed implementing
19 those commitments in a manner, in the manner described in
20 that document.

21 There is a programmatic description of the
22 control program, the work process that is in place to
23 control the implementation or satisfaction of those
24 commitments that were identified.

25 . There is a section in there that explores past

1 audits and special investigations that have occurred on the
2 project. They are tabulated in a manner so they can use
3 those.

4 I will touch on those again in a minute.

5 The next step of the process, program
6 verification, we develop a plan on a sampling basis to go
7 out and verify the programmatic aspects, technical aspects,
8 construction of NR, operational aspects of those
9 commitments.

10 The sampling technique, focus of those
11 samples, timing of those samples is guided by a number of
12 things.

13 It's guided by past audits, frequency of those
14 audits, the results of those audits. Problems experienced
15 at other plants, quality concerns that have been filed on
16 the project all go into the selection of the sample basis
17 and timing of that sample.

18 MR. EBERSOLE: To step backward a little bit,
19 I am looking at the work areas, civil, mechanical -- I can
20 make a variety of interpretations.

21 Is this just in the, sort of the inspection
22 context, to validate the actual material representation of
23 the plant according to specs and drawings? Or does it go
24 back and look at the design process?

25 Can you elaborate on just what it means? For

1 instance, when I look at instrumentation and controls, I
2 could take this at the point of beginning of concept if I
3 wanted to, and say, is my concept right? That is about as
4 early as I can take it.

5 Then I can take it at the back end and say,
6 did they hook the wires up right?

7 MR. RAMSEY: We are going back that far, okay.

8 MR. EBERSOLE: I don't know where you are in
9 that span.

10 MR. RAMSEY: That is good. I will go back to
11 the slide I was on, because that is the program
12 verification process, and the independent design and review
13 process we go through.

14 Taking the original commitments made on the
15 project, whether that is a dampening value for seismic
16 analysis, whatever the value is or commitment is, we are
17 going back to the original point of commitment that was
18 made on the project, and looking at the project for
19 compliance with that commitment through today.

20 That includes two pieces. That includes the
21 programmatic, when you are looking at engineering, and the
22 interpretation of codes, standards or whatever other
23 documents to the degree that we have committed to them the
24 actual technical implementation or application of that
25 document commitment.

1 As we move into the construction portion of
2 it, it means the review of the material certification, it
3 means review of the specifications.

4 It means a review of the installation
5 construction procedures.

6 Collectively for both of those parties it
7 means a walk down of selective areas in the plant to look
8 at the actual construction process, if possible, or the
9 actual constructed product.

10 We are looking particularly at any piece that
11 we have available. In the first module, reenforced
12 concrete structures module, of course, we had a lot of
13 material.

14 We are looking for that that has been through
15 the complete process and has been accepted by our QC
16 process as being complete

17 So we have a measure of total program of the
18 original commitments through completed implementation.

19 MR. EBERSOLE: Is it true you do this not for
20 all elements of the plant, but as you said a selected area?
21 What is the criteria for selection?

22 MR. RAMSEY: Let me address what I think your
23 question is.

24 The samples I indicated is for going out and
25 sampling -- let me back up.

1 Those commitments I indicated we have
2 identified, we go out and identify the implementing
3 document on all of those.

4 MR. EBERSOLE: Yes.

5 MR. RAMSEY: What we go out and pull a sample
6 on is the sample, if we start at the engineering end, maybe
7 a sample of FCR's, a sample of calculations, a sample of
8 design change notices, sample of the procedures
9 calculations associated at that time.

10 If we go to the construction portion we pick a
11 sample in the same manner of various key documents.

12 Let me illustrate with the reenforced
13 concrete. There, our sampling basis was picked by looking
14 back at the key procedures that had controlled the work in
15 that area over the life of the project.

16 Looking at them and putting them down in a
17 time basis, we looked at the various possible combinations
18 of procedures that co-exist.

19 Based on that and a calendar, we determined we
20 would use as our sampling basis one concrete placement
21 every quarter or for each combination of procedures that
22 existed over the life of the project.

23 That resulted in 26 pours in the placement of
24 the concrete in Unit 1.

25 We then took that placement and reviewed all

1 QC documentation of materials, receipt, inspection
2 documents associated with that placement.

3 That review consisted of something like
4 approximately 4000 documents.

5 MR. EBERSOLE: What about the independent
6 design review?

7 I am thinking now in the background of Watts
8 Bar where Black and Veatch was hired to examine the design
9 process.

10 They took what they called a vertical cut of
11 the plant. They tried to pick a most sensitive system, and
12 they did, which was aux feedwater.

13 MR. RAMSEY: I am going to get into that.

14 MR. EBERSOLE: You are?

15 MR. RAMSEY: Let me address you with this one
16 very briefly, though.

17 In the first module, we are using that as an
18 example, they looked at all the structures to a given level
19 of detail. Within that they picked 60 sensitive issues
20 within the other structures and considered to a greater
21 depth in their review.

22 They reviewed the calculations, the drawings,
23 specifications against the technical commitments that we
24 had and passed professional judgment as to the adequacy of
25 that work.

1 MR. EBERSOLE: A particular place. I noticed
2 some observations in the SER and some valve designs.

3 You operate this containment, nominally, it's
4 sealed, isn't it? It's closed when it's on line?

5 MR. THOMAS: Yes.

6 MR. EBERSOLE: Yet, you must maintain
7 equipment inside, right?

8 This brings you to the problem of what is the
9 ambient conditions in there certainly with respect to
10 radioactivity. When you do and you do not purge.

11 That brings up the question of when you are
12 purging, can you close the purge valves if you have an
13 accident?

14 I guess that gets to the question of will the
15 purge valves, are they competent to close under loads?

16 Is this the kind of module that you would look
17 at?

18 MR. RAMSEY: We will examine that issue, not
19 in this module itself.

20 MR. EBERSOLE: But it will be somewhere?

21 MR. RAMSEY: The impact of radiation on
22 concrete was examined to some degree in this module and
23 will be examined further.

24 It will be examined in the IDR. I will speak
25 to the structure of that.

1 MR. EBERSOLE: Okay.

2 MR. THOMAS: Let me clarify for Mr. Ebersole.

3 The type system we have for meeting that
4 requirement of adequate closure and all is resolved with
5 the NRR staff in terms of the design bases and what is
6 acceptable for a licensing standpoint.

7 This program is to check to see if we
8 implemented our commitment in the FSAR.

9 MR. EBERSOLE: This is the realization of your
10 commitment, right.

11 MR. THOMAS: Yes.

12 MR. WARD: I am having a little trouble
13 understanding what the thrust of this is.

14 Could I characterize it as each module is a
15 bundle of commitments?

16 MR. RAMSEY: Yes.

17 MR. WARD: That you have? And you pick those
18 commitments from wherever they have come.

19 A lot are in the FSAR, but others are in other
20 places.

21 So a module is a bundle of commitments in sort
22 of a given engineering area?

23 MR. RAMSEY: That's correct.

24 MR. WARD: Okay.

25 MR. RAMSEY: Independent design we will

1 discuss in detail a little later.

2 The assessment section is a key and important
3 section we feel of the module. Once the team has conducted
4 their assessment of the scope of work, the module is
5 reviewed by line management to see what we have described
6 in programmatic description and others is accurate.

7 But more importantly, there are a number of
8 people, including the Readiness Review Board, vice
9 president and project general manager, quality assurance
10 readiness review staff.

11 We pass an assessment of the job that we have
12 done, readiness review task force as done, in assessing the
13 project.

14 And findings that have resulted, and any
15 corrective actions that the project has implemented in
16 response to those findings.

17 (Slide.)

18 Self-assessment, we have expanded a little bit
19 already on.

20 A process where we go through and take those
21 commitments, first, the commitment point, where we do a
22 programmatic review, the commitment is to purchase the
23 material to a given -- a given material.

24 We go out and actually verify that the
25 purchase order specifications specified the right material

1 to a code or a standard, or to a given dampening value.

2 We check the calculation, the criteria have
3 that in them. We do it from both the design and
4 construction standpoint.

5 Then we go out and start from the construction
6 standpoint, the hardware verification.

7 Did we build it like the drawings called for?

8 If it's been through the program, do the
9 drawings, control documents in the plant now represent the
10 same thing?

11 Design verification. The group looks at the
12 program and sees that the process, that the design
13 documents, the calculations have been revised accordingly
14 for any design changes that require the closing of the
15 loop.

16 Independent design review is conducted to see
17 that technically it's been implemented and that from a
18 design standpoint the plant is adequate. Of course, a key
19 portion I indicated earlier in the self-assessment is the
20 Readiness Review Board self-assessment, or assessment of
21 this part.

22 Let me talk to that a little bit.

23 The Readiness Review Board has taken a number
24 of steps to accomplish that.

25 One, they have assigned each module we are

1 preparing to an executive. And he has working in his
2 direction, at the direction of the board, a single or
3 multiple experts in the area of the working reviewed.

4 They review our assessment plans, our
5 checklist, our samples. The findings, scope that we are
6 looking at, the corrective actions of the project.

7 And assess whether they think that the process
8 that we have gone through indeed is reflective of the
9 status of the project and its current preparation for
10 operation, operational readiness.

11 (Slide.)

12 Following the Board's assessment, the module
13 is presented to the vice president and general manager, and
14 upon his acceptance is transmitted to the NRC.

15 Involved in the review of this thus far today
16 have been NRR, I & E in region, I & E in Washington, and a
17 number of other staff functions.

18 Once they have received the module, there is a
19 period they review it initially.

20 Then we make a presentation to them on the
21 module, both the scope, sample size, selection technique,
22 review process that we went through, and the results of
23 that review process, particularly significant, significant
24 findings and actions implemented by the project to address
25 those findings.

1 The independent design review philosophy that
2 you asked of is basically a system subject review.

3 By that I mean we pick a single system with a
4 vertical slice, it looks in depth at that system from on
5 top to bottom. Gives particular emphasis to the interfaces
6 which I have indicated there. But that is much broader
7 than that.

8 That system is picked, a couple criteria pick
9 the system that has major design effort by the EA. But it
10 does have extensive NSSS interfaces associated with it.

11 In the case of the Vogtle project that is the
12 aux feedwater system.

13 There are additional reviews outside of that
14 system that take place that allow us to address design
15 construction consideration, or commitment considerations
16 that cannot be adequately addressed by the scope of a
17 particular vertical slice that we picked.

18 From the subject standpoint, is a complex
19 subject or subject that has been difficult for the industry
20 to handle.

21 Examples of that are equipment qualifications,
22 the 2 over 1 issue, hazards.

23 The Vogtle project in that case is looking at
24 the equipment qualifications and the 2 over 1 issue in
25 depth as a part of the independent design review.

1 MR. EBERSOLE: Let me fire off a shot in the
2 dark.

3 When I first saw this thing here, I just ran
4 through it and made a few stabs at questions that might be
5 applicable here.

6 For instance in the aux feedwater system, back
7 in the electrical system SER, I found a statement to the
8 effect that it was a two and three quarter hour battery
9 duration time uncharged.

10 MR. RAMSEY: Yes.

11 MR. EBERSOLE: Then I said that is not enough
12 time to run the aux feed pumps. I need battery power to
13 run aux feed.

14 Is this the kind of things you look at?

15 MR. RAMSEY: We are examining to see that we
16 meet those commitments. We are not deciding whether the
17 licensing basis is sufficient.

18 MR. EBERSOLE: I don't think there is a
19 licensing basis.

20 MR. RAMSEY: In that case, that happens to be
21 an unresolved issue, I believe.

22 MR. EBERSOLE: Is it?

23 MR. THOMAS: Not on our project.

24 MR. RAMSEY: Not our project, no. A generic
25 issue.

1 MR. EBERSOLE: Right. But that is typical of
2 the things you would look at? You would find out whether
3 the correlation between the battery lifetime and pumping
4 power is reasonable?

5 MR. RAMSEY: Yes.

6 MR. EBERSOLE: Irrespective of whether it was
7 regulations or not?

8 MR. RAMSEY: Yes, sir.

9 MR. THOMAS: If it is a commitment he checks
10 to see we meet it. That is the extent of his review.

11 MR. EBERSOLE: It was just an example. I was
12 probing to see what you did here.

13 Go ahead.

14 MR. RAMSEY: That example we have already
15 discussed in house ourselves.

16 The area that you have asked, the review will
17 concentrate on the interface areas and the impact upon the
18 operation of the plant from that standpoint, the ability to
19 shut the plant down, the ability to control the plant.

20 MR. THOMAS: Tell him which system you are
21 going to use.

22 MR. RAMSEY: The auxiliary feedwater system
23 augmented by a number of variants other than that.

24 The structural design aspects, IDR associated
25 with that will remain in the individual module such as

1 module 1 we talked about earlier because there is not
2 strong systems relationship.

3 The interfaces will be examined. We are with
4 the single system plus additional aspects described above
5 preparing a single IDR document exclusive of the structural
6 aspects which are being currently submitted in structural
7 modules.

8 The review again as I indicated earlier is
9 being conducted by people independent of the preparation
10 for original nation of the work, independent of owning
11 abnormally large quantities of stock in the company, that
12 type of thing.

13 Those qualifications of the people conducting
14 that have been reviewed by I & E, QA staff in Washington and
15 have been accepted.

16 MR. EBERSOLE: I can't help but think that one
17 of the things that always happens, the review may look to
18 his next job as a reviewer, irrespective of what his
19 earlier biases may be. And one must worry about that.

20 (Slide.)

21 MR. RAMSEY: I understand that.

22 MR. EBERSOLE: All right.

23 MR. RAMSEY: We discuss that choice, that
24 aspect in house very extensively in the selection of the
25 contractor for that service.

1 MR. EBERSOLE: Yes.

2 MR. RAMSEY: They have been fully objective
3 thus far in their assessments.

4 In handling this process we have identifying,
5 controlling the discrepancies identified, we issue
6 formal -- issue to projects formal findings. They would be
7 treated in the way you would treat a normal QA audit
8 finding, for instance.

9 They require the project to address the root
10 cause, remedial actions required, actions to prevent future
11 on curbs occurrences, collective significance,
12 transference. A number of issues.

13 Those are uniquely identified and tracked.
14 Project evaluation of those findings and corrective actions
15 are submitted to the readiness review task force who
16 accepts comments as appropriate.

17 Upon acceptance -- to put a level of
18 significance or classification, we have come up with levels
19 of classifying our findings. Those levels are before you.

20 Basically, one has implementation,
21 implications of safety concern. Each of those when they
22 occur is referenced a second time to the project QA
23 organization for reportability evaluation, potential
24 reportability evaluation.

25 The second level classification are those that

1 violate a commitment.

2 The third level is that, procedural violation
3 but still a finding of significance.

4 Those findings are applied once the project
5 evaluation has been completed, and their corrective actions
6 implemented and the readiness review task force has
7 reviewed it to see what the final bottom line is.

8 (Slide.)

9 We have in an effort to integrate our
10 activities with the review activities of the NRC, have
11 prepared detailed schedules. These schedules are typical
12 of that showing actual forecast dates.

13 (Slide.)

14 These are for the modules and for the
15 appendices, are updated on a monthly basis with the NRC.
16 Call for completion of the program the first week of March,
17 next year, for final module submittal.

18 The IDR, vertical slice we just discussed, is
19 on a different schedule.

20 (Slide.)

21 That effort was initiated the first part of
22 May. Basically you see their schedules. The actual review
23 of documentation got under way Monday in Bechtel's offices.

24 We have a team of 12 Stone and Webster people
25 in the offices at this time conducting that review,

1 covering broad functional design areas, instrumentation
2 controls, nuclear, piping stress support, various
3 discipline areas conducting the review.

4 Let me speak to the status of the project now.

5 (Slide.)

6 To date we have submitted three modules and
7 one appendicies to the NRC for their review.

8 We currently expect this month to submit an
9 additional three modules and two appendicies and a program
10 description that is under way that combines, all involved
11 what each module is in detail, what the schedule is, and
12 how the pieces fit together.

13 We reviewed the first week of this month the
14 IDR plan and checklist for the vertical slice with NRC and
15 their contractors. They accepted those documents.

16 Those are what are currently being implemented
17 at the Bechtel facilities this week.

18 (Slide.)

19 The results of the program to date. We are
20 indeed finding problems that would be expected of this
21 project or other projects. We are addressing those
22 problems.

23 The areas that I have categorized, rather than
24 talking to the specific problems, the problems we have
25 found to date in the modules submitted to the NRC have

1 basically fallen into this area. We have experienced
2 difficulty with missing or miss filed documentation.

3 We have found a number of cases, inadequate
4 procedures for control of the work.

5 MR. EBERSOLE: Let me ask about that. What is
6 the work?

7 I could argue that that could be inadequate
8 design procedures. Would it include that?

9 MR. RAMSEY: In some cases, yes, sir, we have
10 found inadequate design procedures.

11 MR. EBERSOLE: So it's the full span of
12 procedures?

13 MR. RAMSEY: Yes, sir.

14 MR. EBERSOLE: All right.

15 MR. RAMSEY: We found, of course, cases where
16 there were failures to follow procedures as they should
17 have been followed.

18 And then we found calculational concerns,
19 primarily in the reenforced concrete module and in the
20 processed piping module. Weaknesss in the area of
21 identification of input, control of inputs, weaknesses in
22 documentation of assumptions.

23 In some cases, timeliness of revision.

24 MR. EBERSOLE: Failure to follow procedures
25 suggests a void in the closure process, or simply a

1 violation. What was it?

2 Usually you think of a check-off or checklist,
3 or some sort of closure.

4 But the failure to follow procedures, did you
5 attribute that to anything in particular?

6 MR. RAMSEY: Failure to follow procedures --

7 MR. EBERSOLE: Discipline?

8 MR. RAMSEY: Is identified in a number of
9 areas. It primarily was identified in the civil structural
10 area.

11 Interpretation of procedures --

12 MR. WARD: What is the root cause, I think he
13 is looking for.

14 MR. EBERSOLE: I'm trying to get to the root
15 cause.

16 MR. RAMSEY: Okay. Root cause, again, they --
17 root cause, people didn't feel the control was necessary.

18 They felt there were enough redundant controls
19 at lower levels that adequately addressed it in the
20 opinion, or professional opinion of the task force members
21 it was not adequate to control at that point.

22 If one would, there might be a future design
23 activity that would have highlighted or caught the problem
24 where we felt the control should be up front, rather than
25 depending on a future action to catch the problem if one

1 resulted from it.

2 MR. EBERSOLE: You say this is almost
3 rebellious. They shouldn't have done it this way.

4 "I am going to could do it my way," when they
5 had a procedure in hand.

6 They didn't recognize the procedure as being
7 as good as the one they knew.

8 MR. RAMSEY: I still --

9 MR. EBERSOLE: "Okay, I have a procedure in
10 hand. I am electing to say that I am not going to follow
11 it."

12 MR. RAMSEY: Following procedures were
13 categorized in a number of ways. In some cases he didn't
14 know the requirement was there. Some cases, it was
15 oversight. Isolated cases we found. The guy missed it.
16 He didn't date a document when he signed it and approved
17 it.

18 You know, minor things like that.

19 MR. EBERSOLE: Sure.

20 MR. RAMSEY: That one would expect is going to
21 occur as you get a thousand people handling thousands and
22 thousands of documents. There are going to be some
23 drop-outs.

24 MR. EBERSOLE: Sure.

25 MR. RAMSEY: There were typical examples of

1 failure to follow where the requirement was in a procedure
2 that the individual did not normally work with, and
3 probably what we deemed an inappropriate procedure.
4 Resulted in findings in both of them.

5 The procedure he worked with was inadequate.
6 It didn't contain all of his requirements.

7 And since he didn't know it was in the
8 procedure, he wasn't following it.

9 MR. THOMAS: Bill, could you put some
10 perspective on the degree to which you found these types of
11 things, like he looked at 4000 documents.

12 How many would you find that met one of those
13 categories?

14 You have investigated tens of thousands of
15 documents to date.

16 Could you give some perspective on the
17 frequency of finding these, rather than just what you
18 found?

19 MR. RAMSEY: Sure. Failure to follow
20 procedures, probably, well, it ended up to being almost a
21 number of isolated cases that add together.

22 Calculation concerns turn out to be probably,
23 out of a case, say, of examination of for example 200
24 calculations, we found probably ten calculations with some
25 problem with them, where there was a question of the

1 documentation, the input, question of the documentation of
2 the assumptions used in the basis for the calculation.

3 Or, in one or two cases, out of I'd say
4 probably -- probably two cases out of a total number of
5 calculations looked at to date, probably on the order of
6 somewhere between five and six hundred. We found probably
7 two cases that had arithmetical errors that resulted in a
8 bottom line air error.

9 MR. THOMAS: In those cases, did you find any
10 that were not acceptable, though might have been some
11 question about them; and did any of them result in any
12 changes in hardware for the concrete module?

13 MR. RAMSEY: No findings to date based upon
14 the full evaluation of my project have resulted in any
15 changes to the actual hardware out there or the plant,
16 itself.

17 MR. THOMAS: Also, acceptable to the
18 independent reviewer.

19 In other words, it was well within the design
20 requirements?

21 MR. RAMSEY: Yes, sir. Each of those
22 evaluations had been reviewed by and accepted by the
23 independent. The corrective actions have been -- there has
24 not been a degradation of the project as a result of any of
25 the problems that we have found.

1 MR. EBERSOLE: Having made this finding, it's
2 a little bit like having disassembled a piece of machinery
3 and found nothing wrong with it.

4 MR. RAMSEY: No, sir, we have found what we
5 consider problems. Let's start at the front. One of the
6 things we started off, we started off with NUREG 1055.

7 We talked earlier of the background of the
8 other projects. If we look at a number of those, some have
9 real problems, some have paper problems, some have --
10 experience delays because we are not certain whether they
11 have a problem or not because of issues raised, or
12 questions raised at the eleventh hour.

13 MR. EBERSOLE: I am talking in this case, not
14 the context--.

15 MR. RAMSEY: I am sorry.

16 MR. EBERSOLE: No.

17 MR. RAMSEY: We have found what we think are
18 significant problems.

19 We think we have taken the actions, the
20 project has, not we, the task force, but the project has
21 taken corrective actions appropriate for those problems and
22 addressing resolving them.

23 Some are still under way. Some of the
24 inadequate procedures we found were in the initial test
25 program.

1 MR. EBERSOLE: Am I hearing, though, that none
2 resulted in actual mechanical changes to the design?

3 MR. RAMSEY: They have not.

4 MR. EBERSOLE: It's all in procedural or
5 administrative use of the design?

6 MR. RAMSEY: Yes.

7 MR. EBERSOLE: Which is important, too.

8 MR. RAMSEY: Yes.

9 MR. EBERSOLE: Let me ask the staff, am I
10 seeing here a pioneer effort by Georgia Power?

11 Is this a new block of paper that is going to
12 descend on you from every project that comes from ATOL's?

13 I can visualize six feet of paper.

14 MR. RAMSEY: More than that.

15 MR. WARD: They said they are going to spend
16 ten man-years on this.

17 How much is Georgia Power and Southern going
18 to spend?

19 MR. RAMSEY: I would say somewhere the order
20 of 65 to 70 man-years in direct expenditure.

21 MR. WARD: How much does the staff spend in
22 getting this thing together?

23 MS. ADENSAM: I don't believe we have gotten
24 the data for the Vogtle SER.

25 There have been other projects we have

1 completed with hearing records and so forth. And there
2 have been tens of thousands of staff hours associated with
3 the complete --

4 MR. WARD: Tens of thousands. So that is a
5 few man-years.

6 MS. ADENSAM: What did we figure, about 2000
7 staff hours per professional year?

8 MR. WARD: Yes.

9 MS. ADENSAM: I have seen numbers as high as
10 36,000 staff hours for completion of the project including
11 the hearing.

12 And I think that was a heavily contested
13 hearing.

14 MR. WARD: So you are talking about almost
15 doubling the effort to add this sort of process to do
16 something which sounds like it isn't much.

17 MS. ADENSAM: Well, it might be as much an
18 increase as 50 percent.

19 MR. WARD: Yes, I know.

20 MS. ADENSAM: Yes. Why is the staff willing
21 to do this?

22 MR. WARD: Why is the applicant willing to do
23 it?

24 MS. ADENSAM: The applicant will have to speak
25 for himself.

1 MR. EBERSOLE: Well, the applicant having done
2 it, must hold back the results of his findings let's say
3 until the next project if you ever have one.

4 Would you expect to continue this, or just
5 improve existing procedures so you can say I don't have to
6 do that anymore.

7 MR. RAMSEY: In my opinion the dollars, the
8 effort expended on this program to date --

9 MR. FOSTER: Don Foster, Vice President and
10 General Manager of Plant Vogtle.

11 Why are we conducting or participating in
12 this?

13 This is an initiative on our part to ensure we
14 are in fact ready for licensing.

15 History indicates there are problems with
16 things outside the normal generic licensing situation as
17 you would find in the review of the SER.

18 We felt it essential to go back and look at
19 the Vogtle project, look at it in detail to ensure we have
20 in fact met those commitments. And that if we did not meet
21 them, we would find those shortcomings, identify and fix
22 them.

23 As to our future efforts, I guess some of us
24 could only hope we have an opportunity to try this program
25 on a future plant.

1 MR. EBERSOLE: I suppose one of the end
2 results is to confirm or deny your approach to keeping the
3 plant in order was correct.

4 MR. FOSTER: Yes, sir.

5 MR. EBERSOLE: And you are finding by and
6 large it was?

7 MR. FOSTER: Yes, sir.

8 MR. EBERSOLE: You might argue then that the
9 findings indicate you don't need to do it because you will
10 have less prospect of trouble.

11 MR. FOSTER: I think the program would justify
12 doing something different and maybe conducting this type of
13 a program early on in concert with the normal flow of the
14 job.

15 I think, one, it would minimize the impact of
16 the cost. It would identify the programmatic problems
17 early on where they could be fixed early on.

18 Then it would be just a matter of hopefully
19 verifying implementation.

20 MR. EBERSOLE: It was really the shadow of
21 these terrible failures at these other plants that drove
22 this.

23 MR. FOSTER: Yes, sir. We are sensitive to
24 those as you can well imagine.

25 MR. EBERSOLE: Thank you.

1 Any further questions?

2 We are doing quite well with the schedule
3 here.

4 In fact we have about 45 minutes, and I would
5 invite the licensee to pick whatever topics you would, and
6 also pick the termination of this afternoon's meeting, if
7 you wish.

8 MR. THOMAS: I thought we might take next the
9 first item on the agenda for tomorrow by Mr. George
10 Bockhold.

11 MR. EBERSOLE: Right.

12 MR. THOMAS: Those items are principal design
13 features, plant status and start up schedule.

14 (Slide.)

15 MR. BOCKHOLD: I am George Bockhold, General
16 Manager of Vogtle Nuclear Operation Department. I work for
17 Georgia Power.

18 I am responsible for the initial test program,
19 start up of the plant and the continued operation and
20 maintenance of the plant when we go into operation and move
21 fuel.

22 Give you a brief background of my personal
23 background.

24 Graduated from United States Naval Academy.
25 Was a submarine officer, nuclear submarine officer.

1 Before leaving Navy was Division Director at
2 Naval Nuclear Power School.

3 Joined Con Edison of New York. Spent five
4 years at their Indian Point Nuclear Station.

5 Was a licensed senior reactor operator on the
6 large Westinghouse plants four loop Westinghouse plants
7 similar to Plant Vogtle during start up of Unit 2.

8 Did other various jobs including being
9 maintenance foreman, and, finally, director of their
10 training, which included a nuclear simulator, the first
11 utility nuclear simulator in the industry.

12 From there I went with the general physics
13 corporation to basically sell extra time on TVA simulators
14 in Chatanooga, Tennessee.

15 We continued to grow. I progressed to vice
16 president in that corporation, including all kinds of
17 services, evening engineering, training, licensing,
18 procedural services to utilities.

19 Joined Georgia Power approximately four years
20 ago as their manager of nuclear training to assist in start
21 up of both the Plant Hatch and Vogtle training centers.

22 Two years ago I became plant manager and
23 subsequently general manager of the Vogtle unit.

24 I would like to cover three of the agenda
25 items for tomorrow.

1 Principle design features, first.

2 (Slide.)

3 Plant Vogtle is a Westinghouse pressurized
4 water reactor. 3411 megawatts thermal. Pump heat, 14
5 megawatts. Total thermal power, 3425 megawatts.

6 We have four loops. Four reactor coolant
7 pumps. Each 7000 horse power. 106,600 design flow.

8 Design pressure, 2485. Design temperature,
9 650 F.

10 Model F shell and U-tube type.

11 Heat transfer area, 55,000 square feet. 5626
12 U-tubes.

13 Pressurizer, of course, is the same design as
14 the reactor coolant system. 2485 psig is the design
15 pressure.

16 680 degrees design temperature. 1800
17 standard, 1800 cubic feet, and flow is 142.1 million pounds
18 per hour.

19 Total volume is 12,462 cubic feet.

20 (Slide.)

21 Reactor core, we have 17 by 17 fuel
22 assemblies. 193 of them controlled by 53 rods. Rod
23 material is Hafnium.

24 Enrichments are 2.1, 2.6 and 3.1 percent
25 initial core load. 50 exit core thermocouples and 58

1 detector paths for incore instrumentation monitoring
2 system.

3 Generator is produced by GE. One high
4 pressure, three low pressure. Operating speed 1800 rpm.

5 Generator output is 1,156,000 kW.

6 25 KV is generator.

7 (Slide.)

8 Looking at the engineering safeguard features
9 quickly, we have four accumulators.

10 Operating pressure, design pressure, minimum
11 of 600 pounds.

12 Minimum operating volume, 950 cubic feet.

13 We have two centrifugal charging pumps.

14 Design flow, 150 gallons a minute.

15 We have two safety injection pumps, design
16 flow, 425 gallons a minute.

17 Two residual heat removal pumps, design flow,
18 3700 gallons a minute.

19 We have nuclear service cooling water towers.
20 Later we will have a more detailed presentation on that
21 because that is a unique design feature of this plant.

22 In that area we have six pumps, three per
23 tower. 8600 gallons per minute.

24 (Slide.)

25 MR. WARD: George, when you give the rated

1 flows of the charging and injection pumps, is that per
2 pump?

3 MR. BOCKHOLD: Per pump.

4 MR. EBERSOLE: About the accumulator, what
5 measures do you take to preclude nitrogen injection.

6 MR. REED: The primary loop when these things
7 are discharged? Are there membranes in there or not?

8 MR. BOCKHOLD: There are not membranes in
9 there. The operating procedures during the various
10 accidents at the appropriate point require closure of the
11 discharge valves on the accumulators.

12 MR. EBERSOLE: Well, you know what I am
13 interested in is, what is the prospect of getting gas into
14 the U-tubes, et cetera. So you are telling me it depends
15 on valves.

16 MR. BOCKHOLD: It depends upon valves, yes,
17 sir.

18 MR. EBERSOLE: That depends in turn on signals
19 to the valves.

20 MR. BOCKHOLD: Operator action for the valves.

21 MR. EBERSOLE: And operator action depends on
22 signals to his eyeballs.

23 MR. BOCKHOLD: Yes, sir.

24 MR. EBERSOLE: That comes from from what?

25 MR. BOCKHOLD: It depends upon his procedures

1 which depends upon parameters in the primary and secondary
2 system for the emergency operating procedures.

3 MR. EBERSOLE: It has nothing to do with
4 percentage discharge at the accumulators?

5 MR. BOCKHOLD: We do not have a full level
6 indication on the accumulators, if that is your question.

7 MR. EBERSOLE: You know what I am trying to
8 do?

9 MR. BOCKHOLD: I understand your line of
10 questioning, yes, sir.

11 MR. EBERSOLE: Fine. I want to get to the
12 definitiveness or lack of it about getting or not getting
13 gas in the system.

14 I guess we will take that up maybe at later
15 topics.

16 Or do you want to mention it in here?

17 How does he make himself feel warm that he
18 doesn't have any gas in the system?

19 MR. BOCKHOLD: If I pick a particular
20 accident, let's pick a particular accident, when you go
21 through the Westinghouse owners group emergency response
22 guidelines and look at the background documents for those,
23 if you get down to a number like 400 degrees in the reactor
24 coolant system and the corresponding pressure, saturation
25 pressure for that number is about 260 pounds, 265, in that

1 range.

2 MR. EBERSOLE: Yes.

3 MR. BOCKHOLD: At that point is the point, if
4 you haven't taken any other action before then, you will
5 allow nitrogen to go into the reactor coolant system.

6 MR. EBERSOLE: Yes.

7 MR. BOCKHOLD: If you have a LOCA type
8 situation, the gas goes into containment.

9 MR. EBERSOLE: It wouldn't matter.

10 MR. BOCKHOLD: If you have a steam break type
11 situation and you look at one steam line break, you are not
12 going to get that low in pressure.

13 MR. EBERSOLE: Yes.

14 MR. BOCKHOLD: So you have to have accidents
15 beyond the chapter 15 type analyzed accidents. Multiple
16 accidents, severe accidents.

17 MR. EBERSOLE: Yes.

18 MR. BOCKHOLD: Okay, when you get to that
19 point the operator is trained basically, before you get to
20 that point, you want to avoid introducing nitrogen into the
21 reactor coolant --

22 MR. EBERSOLE: But he doesn't have any
23 information on the residual liquid in the accumulators,
24 does he?

25 MR. BOCKHOLD: He does not have a direct level

1 indication after the accumulators initially empty
2 because --

3 MR. EBERSOLE: He is riding on temperatures
4 and pressures and inference that the accumulators are empty
5 or not empty.

6 MR. BOCKHOLD: Well, he is riding on his
7 procedures and the analysis of the -- of those accidents
8 and emergency --

9 MR. EBERSOLE: Right. I don't want to beat on
10 this longer.

11 MR. THOMAS: Mr. Ebersole, you did have two
12 questions we planned to answer tomorrow about U-tubes and
13 main steam line break.

14 We plan to discuss those tomorrows.

15 MR. EBERSOLE: This is, of course, how does it
16 get there.

17 MR. THOMAS: Yes.

18 MR. EBERSOLE: Okay.

19 MR. BOCKHOLD: All right.

20 (Slide.)

21 As you saw on your tour today we have
22 transport pumps with the cooling towers. Two of them, 600
23 gallons per minute.

24 If we only had one train after that would give
25 us approximately a 30 day supply of water.

1 Because this is the ultimate heat sink. NSCW
2 cooling towers.

3 Two towers per unit. We have four fans, each
4 fan 164 rpm. 535,000 cubic feet a minute. Wet bulb
5 temperature of 82 degrees.

6 Continuing with safeguard features, component
7 cooling water system. Six pumps, three per train. Each 50
8 percent capacity. Five thousand gallons per minute.

9 Aux feedwater, we have two motor driven and
10 one turbine driven pump. 630 gallons per minute per pump
11 for the motor driven.

12 MR. EBERSOLE: Let me ask you, just another
13 stab in the dark. 160 psi. It looks into a primary loop
14 liquid system at about 400 pounds, is that right?

15 MR. BOCKHOLD: Component cooling supplies the
16 RHE heat exchange, which their pressure is variable.

17 But nominally it's about 400 pounds operating
18 in that mode.

19 MR. EBERSOLE: Right. If I have a two tube
20 failure it would go from primary loop to component cooling,
21 won't it?

22 MR. BOCKHOLD: Yes.

23 MR. EBERSOLE: That should be a very
24 infrequent problem, shouldn't it.

25 MR. BOCKHOLD: Yes, sir, should be.

1 MR. EBERSOLE: Have there been any of those?

2 MR. BOCKHOLD: I don't right off hand know of
3 any.

4 But there are radiation monitors on that
5 system to detect that possibility.

6 Then you have a separation between component
7 cooling and the NSCW cooling towers where component cooling
8 is cooled by.

9 So you have basically an intermediate system
10 component cooling to prevent release to the public.

11 MR. EBERSOLE: You would expect to get a
12 radiation signal first.

13 MR. BOCKHOLD: Yes, sir. High level in the
14 surge tank and radiation signal. Multiple indications of
15 that problem.

16 MR. EBERSOLE: Good. Thank you.

17 (Slide.)

18 MR. BOCKHOLD: Up to the turbine aux feedwater
19 pump. Turbine pump, one of them, 1175 gallons per minute.

20 Continuing on, containment spray pumps, two of
21 them, 2600 gallons per minute.

22 Our big cooling towers which, of course, dwarf
23 everything else on the site, one per unit. Approximately
24 540 feet above grade level.

25 Design wet bulb 78 degrees. Inlet temperature

1 on a hot day would be 122 degrees with outlet temperature
2 of 89 degrees.

3 Design circumstance water flow into the
4 condensor back through the cooling tower is a little over a
5 half million gallons per minute.

6 Containment is a steel lined, large concrete
7 dry containment structure. Design pressure is 52 pounds.
8 Large volume, 2,750,000 cubic feet.

9 Concrete thickness at the dome, and large
10 portion of the vertical wall is 3 and three quarter feet
11 thick.

12 MR. WARD: George, a question on the aux feed
13 flow.

14 What aux feed flow is required for decay heat
15 removal right after shutdown?

16 I mean, you have got two 600 gpm pumps and one
17 1200. Is that 200 percent altogether?

18 MR. BOCKHOLD: One of those pumps would be
19 sufficient.

20 MR. WARD: The 600 is enough?

21 MR. BOCKHOLD: One would be sufficient.

22 MR. BATUM: Requirement for the hundred
23 percent flow for the accident analysis, approximately 510
24 gallons. We have two one hundred percent motor driven and
25 one 200 percent.

1 MR. WARD: Okay. Why is your steam pump so
2 big?

3 MR. BATUM: We will get you an answer to the
4 1125 number.

5 MR. BOCKHOLD: If there are no more questions
6 on the general design features, we will go into the
7 construction and start up statistics.

8 (Slide.)

9 We are going to look at the plant status and
10 start up status.

11 (Slide.)

12 On this transparency are milestone schedules
13 for Unit 1.

14 Unit 2 milestone schedules is at 18 months
15 after the Unit 1 schedule.

16 We have completed two milestones. We have
17 energized the plant. The way we defined that was
18 energizing the 4160 volt busses and above.

19 Scheduled for March 24th year. We completed
20 it early in February.

21 Reactor vessel available for flush scheduled
22 for May, and we completed that in May of this year.

23 The next milestones scheduled are secondary
24 hydro, November, turbine on turning gear, primary hydro,
25 initial condensor vacuum all scheduled for December this

1 year.

2 Hot functional, late January 1986. Integrated
3 leak rate testing, March of 1986.

4 Fuel load is scheduled for September of 1986
5 and commercial operation is scheduled for March of 1987.

6 (Slide.)

7 Looking at the construction completion status
8 of the plant as of the end of June for Unit 1 and common we
9 were approximately 82 percent complete based upon earned
10 manhours. For Unit 2 and common we were approximately 47
11 percent complete.

12 Give you some backup information on that
13 completion status.

14 MR. EBERSOLE: What was that you said, on the
15 basis of what manhours?

16 MR. BOCKHOLD: Earned manhours.

17 MR. EBERSOLE: Earned manhours?

18 MR. BOCKHOLD: Earned manhours.

19 MR. EBERSOLE: I am trying to index that
20 again, percentage completion of physical plant.

21 MR. BOCKHOLD: Let me pick one of these. For
22 example, concrete. There is not necessarily a one to one
23 relationship between the quantities here and the earned
24 manhour percentage.

25 In placing concrete, or a piece of pipe. That

1 might be an easier example. There are some pieces of pipe
2 that you can run, and you can expend very little manhours
3 to go from point A to point B.

4 There are other pieces of pipe that are very
5 difficult to install and you will expend a lot of manhours.

6 We look at the quantities and we look at the
7 requirements, okay, to place the various pieces of pipe.
8 And we create an earned manhour schedule.

9 So we take that schedule, and then we actually
10 look at the physical progress, and then give ourselves
11 credit based on that physical progress against what we
12 think the earned manhours are.

13 This shows quantity, and the final column
14 shows earned manhours for the construction, bulk
15 activities.

16 MR. WARD: Quantities of what?

17 MR. BOCKHOLD: They are indicated over here.
18 Concrete, cubic yards, backfill --

19 MR. WARD: I see.

20 MR. EBERSOLE: I guess I can do with the first
21 two columns. I don't know what the last one contributes,
22 that is, earned manhours.

23 MR. BOCKHOLD: It's a measure of percent
24 complete. There are other means of measuring percent
25 complete.

1 MR. FOSTER: Construction percent complete.

2 MR. EBERSOLE: Okay.

3 MR. BOCKHOLD: That is what the first slide
4 was. Construction percent complete.

5 MR. EBERSOLE: I see. Okay.

6 MR. BOCKHOLD: The last item here is Georgia
7 Power Construction completes the system and turns it over
8 to Georgia Power Nuclear Operations, my group.

9 We then go ahead and do the component tests,
10 flushing, preoperational tests.

11 Of course, then, integrated, and we complete
12 the start-up testing.

13 At this point construction organization has
14 turned over approximately 16 percent of the quantities that
15 are in the plant to operations for testing.

16 (Slide.)

17 This slide is the same type of information,
18 except for Unit 2.

19 (Slide.)

20 My final slide shows the status of system
21 turnovers.

22 Let me first come over here and point out that
23 we have 377 systems, subsystem and major component packages
24 to be turned over from Construction to Operations.

25 Okay, and then these symbols and codes and

1 indications here indicate the various types of packages
2 based upon their start up nomenclature.

3 The green is the packages that have been
4 turned over as of 7-5-85.

5 The first column is what was turned over from
6 April of 1984 to December of 1984, basically last year.

7 Then this is this year's turnover results and
8 future schedules.

9 We are slightly behind, as indicated by some
10 of these packages not having been turned over.

11 We have recently put significantly more
12 resources on accomplishing these goals of turnover, and we
13 are hoping to make up the scheduled time.

14 That completes my presentation and the first
15 part of tomorrow's presentation.

16 MR. EBERSOLE: Thank you.

17 MR. BATUM: If I may come back to the
18 feedwater question.

19 MR. EBERSOLE: Yes.

20 MR. BATUM: The close to 1200 gpm capacity
21 covers the feedwater accident where the flow splits out of
22 the turbine driven pump delivered to all four steam
23 generators after the flow goes out the break and the other
24 half goes between the steam generators.

25 That is the reason the capacity of those are

1 doubled.

2 MR. WARD: So there is some sort of a flow
3 limiter on the broken side; is that right?

4 MR. BATUM: Yes, sir.

5 MR. WARD: All right.

6 MR. EBERSOLE: Well, again, we are doing quite
7 well.

8 I invite the applicant to again utilize the
9 time until 5:30 any way he wishes. I can't call on anybody
10 who may not be here.

11 MR. THOMAS: I would like to suggest that the
12 next item that we take up the preoperational and in service
13 testing of pumps and valves.

14 Mr. Bud Epps. He also can address the
15 question that came up earlier about the inspection of cast
16 stainless steel.

17 MR. EBERSOLE: Okay.

18 MR. THOMAS: Bud, please indicate your
19 affiliation and position.

20 MR. EPPS: Okay. My name is Bud Epps. I am
21 the Manager of Inspection Testing Engineering.

22 Our group has been assigned responsibility for
23 implementing preservice inspection program at Vogtle on
24 Units 1 and 2.

25 We also implement those programs at the Hatch

1 plant in Georgia Power's system.

2 What I will do is address the item in the SER
3 related to the inspection of the reactor coolant system.
4 Then discuss the pump and valve testing program.

5 (Slide.)

6 I put together this overhead to summarize
7 what we have done in the preservice inspection program for
8 examination of reactor coolant system piping, and identify
9 several major milestones that we met in that process.

10 As I am sure you gentlemen know, examination
11 of cast stainless material with ultrasonics is an issue in
12 the industry at present that is being addressed by a lot of
13 inspection agencies and the utilities.

14 We addressed it by putting together a program
15 to develop a method for effectively examining that material
16 in the reactor coolant system at Vogtle.

17 Piping on Vogtle 1 is centrifugally cast
18 stainless steel and fittings are statically cast stainless
19 steel.

20 MR. EBERSOLE: Is this common usage? If I
21 look around the PWR's, how many will I find that use cast
22 stainless for the pipe fittings?

23 MR. EPPS: You will find probably most of them
24 using cast stainless. Westinghouse, that is.

25 I think some of the other PWR's use clad

1 carbon in some cases.

2 MR. EBERSOLE: I seem to have heard from Paul
3 recently that there has been found some sort of long-term
4 cracking in cast stainless. Can any of my colleagues
5 recall this?

6 MR. WARD: No.

7 MR. REED: It's molecular metallurgical
8 change. But it's not cracking.

9 MR. EBERSOLE: Not cracking?

10 MR. REED: They have been using cast stainless
11 since about Ganet plant vintage.

12 MR. WARD: I guess that is lost of toughness.

13 MR. EBERSOLE: That's right. Embrittlement.

14 MR. EPPS: I had heard of no cases of
15 cracking.

16 MR. EBERSOLE: Yes. But some degree, I don't
17 know how severe.

18 MR. EPPS: Okay. So the first thing we did
19 was to have a calibration block made of the actual
20 material, that was on Unit 1, be used for calibrating in
21 preparation for doing examinations.

22 After that, we developed a technique using
23 pitch-catch transducers that would yield effective results.

24 We sent the cal block off to one of the
25 manufacturers and got him to fabricate some that were

1 focused on the proper depth to give good examination of
2 that particular material and thicknesss involved.

3 Then we wrote our procedure around use of
4 those transducers, and took our equipment and procedures
5 and calibration block to the Region 2 offices in Atlanta.

6 NRC has procured some actual crack cast
7 stainless samples. We conducted a demonstration by using
8 our personnel procedures, equipment and so forth as we
9 would implement in the plant and examined those samples and
10 effectively demonstrated to the NRC inspectors that we
11 could detect the cracking and properly characterize the
12 cracking in the material. This, of course, was done
13 manually.

14 MR. WARD: When you say properly characterize,
15 do you mean size?

16 MR. EPPS: Within a range, yes. We predicted
17 that the cracking was within the range of somewhere between
18 20 and 50 percent depth in different locations. Data
19 showed that we were in the range of how deep some of the
20 cracking was in the material.

21 After that, we took our technique, equipment,
22 procedures and so forth to the plant. We didn't
23 have--ultrasonically examined a hundred percent of the
24 welds in the system in Unit 1 and have evaluated the data
25 and resolved all the indications that were found.

1 Let me address the indications. One thing we
2 wanted to do was find something in the piping that is
3 actually in the pipe such that we knew what that was. And
4 counterbore is the logical thing to look for.

5 Our inspectors found some counterbore that
6 they could see with our techniques.

7 One of them actually crawled inside the
8 coupling and -- and proved we were seeing the counterbore.

9 So we felt that was yet another demonstration
10 we were getting an effective examination of that material.

11 There were two other items in the SER. I will
12 briefly address those.

13 One was the reactor pressure vessel
14 examination relative to Reg Guide 1.150. We have let a
15 contract, in fact, with Lusting Engineering. That will be
16 done later this year.

17 Our people have reviewed their procedures and
18 the program to assure they are going to meet Reg Guide
19 1.150. We are committed to that.

20 As far as relief requests are concerned, so
21 far, in our program we have only identified a few minor
22 items that will require relief requests under section 11 of
23 the ASME Code.

24 We will keep a list of these relief requests
25 and, at a later date, submit those to the NRC.

1 I would like to add, too, that all along,
2 Georgia Power has taken the position that section 11 of the
3 ASME Code will be met in the preservice and inservice
4 inspection program and they have given great support to
5 that.

6 That is our intent in implementing the
7 program.

8 MR. WARD: Before you leave this, the
9 pitch-catch transducers seemed to work with apparently the
10 centrifugally cast material.

11 What about the fittings that are statically
12 cast?

13 MR. EPPS: Yes, they also work on those. As a
14 matter of fact, the counterbore I mentioned was on the
15 fitting side.

16 So we verified we were getting a good
17 examination of the static cast material, also.

18 That is a good question, because that is one
19 point we had in mind as far as looking for some way to
20 verify we were getting a good examination there, also.

21 (Slide.)

22 The next subject I will cover is inservice
23 testing of pumps and valves.

24 We are responsible for the engineering support
25 the Georgia Power Company for the ASME section 11 pump and

1 valve test program.

2 The Vogtle 1 preservice inspection and
3 testing, which includes pump and valve programs, have been
4 established to meet the 1980 ASME section 11 code through
5 winter of 1980 addenda.

6 That is an upgrade to a later code than is
7 required in doing a preservice.

8 But our intent as requested by Georgia Power
9 was to do the preservice under a code as close to what will
10 be done in the inservice as possible. So we have upgraded
11 to the code through winter 80.

12 The inservice inspection and testing program,
13 that is the inservice program, that will be later
14 implemented after operation, will be established in
15 accordance with section 11. That is effective 12 months
16 prior to the operating license.

17 Right now it will probably be the 1983 version
18 of ASME Code. That is requirement in 10 CFR 50.

19 So in effect we will get an inservice most
20 likely in the 83.

21 Pump test program will list all safety-related
22 class 1, 2 and 3 pumps that are provided with an emergency
23 power source and are necessary to safely shut down the
24 plant or mitigate the consequences of an accident.

25 That is the way the scope of the program is

1 defined.

2 Valve test program will list all
3 safety-related valves required for the same purpose in
4 class 1, 2 and 3 systems.

5 MR. REED: On your valve test program, way
6 early on you are going to have to put in certain taps in
7 between valves for pressurizing and water and leakage
8 determinations.

9 Have you done all this evaluation for where
10 you have to add pigtails and taps and test valves?

11 MR. EPPS: You are talking about the local
12 leak rate program under appendix J?

13 MR. REED: Right. Appendix J.

14 MR. EPPS: Skip, do you want to address that?

15 MR. KITCHENS: I am Skip Kitchens, Operations
16 Superintendent for Plant Vogtle, Georgia Power Company.

17 In developing our inservice testing program
18 for pumps and valves we did review the drawings.

19 We had Southern Services as well as another
20 contractor do a design review versus the code. And we
21 identified places we needed test taps on valves, to answer
22 your specific question.

23 MR. REED: Have you got them installed yet?

24 That will have to precede your base line,
25 beginning test.

1 MR. KITCHENS: Right. We did this starting
2 about in 1981.

3 Our intention was to have them installed
4 before we do the preservice test on all these. As far as I
5 know, that will be done.

6 MR. EBERSOLE: Could you elaborate on what you
7 call operability requirements of pumps and valves?

8 Did you see that list of questions I fixed up?

9 MR. EPPS: I am not sure I saw the same one
10 you put together. I assume --

11 MR. EBERSOLE: Did you say preoperational and
12 inservice testing of pumps and valves with respect to A,
13 initial capability and margins to functionally operate
14 under emergency flow and differential pressure conditions?

15 That is not a simple matter.

16 MR. THOMAS: That is more of a design
17 question.

18 I think you can address B, however, Bud.

19 MR. EPPS: That is covered in the last bullet
20 on the slide.

21 The section 11 preservice testing program will
22 establish the base line for pumps and valves for later
23 comparison within service testing results.

24 Okay, then that statement you were alluding
25 to, to verify that these components meet operability

1 requirements.

2 Under section 11 we look for degradation.

3 MR. EBERSOLE: That is a differential
4 measurement, departure from what you had in the beginning.
5 I want to know what you had in the beginning and how did
6 you confirm it?

7 MR. THOMAS: That is really an engineering
8 question, rather than an inservice inspection --

9 MR. EBERSOLE: It is, right.

10 MR. THOMAS: I would prefer to defer that and
11 let him go ahead.

12 MR. EBERSOLE: Very well.

13 MR. EPPS: As far as the section 11 program is
14 concerned, that base line will be done for later comparison
15 in inservice.

16 Of course, under section 11 of the code there
17 are certain degradation allowed. Beyond that point, some
18 corrective action has to be taken.

19 There will be a complete base line done for
20 that comparison later in the program.

21 The question you are alluding to I think will
22 be addressed by engineering as far as what the original
23 program will do in the preopens.

24 MR. EBERSOLE: What was in the procurement
25 specs, why it was there, how it was value dated and proven

1 eventually.

2 MR. EPPS: Yes.

3 MR. REED: Another question with respect to
4 preparing for base line inservice testing. Will Georgia
5 Power with their own personnel do a repacking of all key
6 valves before they go into their test program or into their
7 hydros?

8 What I am thinking about is that valves quite
9 characteristically can come to the job site with a shipping
10 packing or another packing.

11 And characteristically the construction forces
12 can sometimes want to pack the valves, but might not have
13 the skill and expertise to do it to the best interest of
14 the long-term operation.

15 MR. BOCKHOLD: The answer is yes, sir.

16 MR. REED: You will with your forces, train
17 forces, pull every packing ---

18 MR. BOCKHOLD: We will repack key valves.

19 MR. EBERSOLE: Since packings can influence
20 where torque switches ought to be, et cetera, can you sort
21 of elaborate how you control this?

22 MR. BOCKHOLD: We follow valve manufacturer's
23 requirements, train our people to do packing.

24 MR. EBERSOLE: Suppose a man pulls too many
25 turns on some packing? How will you know that?

1 MR. BOCKHOLD: We also test the valves to make
2 sure they are stroke times appropriate.

3 MR. EBERSOLE: So you use the breaking effect.
4 I guess you use it whether it leaks or not.

5 MR. BOCKHOLD: Yes, sir.

6 MR. EBERSOLE: View.

7 MR. WARD: Have you considered systems for
8 measuring valve driver signatures?

9 MR. BOCKHOLD: We are in the process of
10 considering those signatures. A lot of people have had
11 very good results on using that signature in combination.

12 Really, one of our opportunities for having
13 high availability is to handle the valves correctly. We
14 think it's good to look at all the preventive and
15 predictive maintenance items on those valves.

16 MR. WARD: Bud, let me ask you one question.
17 You apparently are responsible for inservice testing at
18 Hatch, pipe inspection.

19 How would you characterize your ability to
20 detect and size piping cracks at Vogtle versus the ability
21 to do the same at Hatch?

22 MR. EPPS: That is a very complicated
23 question.

24 I would say our ability to detect and size
25 IGSCC on the piping, rod reenforced stainless piping, is

1 quite good as a result of the programs at the EPRI center
2 we have gone through with our personnel both in detection
3 and sizing.

4 It's difficult to compare that to cast
5 stainless because with IGSCC we have seen many examples of
6 actual cracking, whereas on the centrifugally cast
7 stainless we have seen I think two samples of cracking.

8 And they have not actually been cut after we
9 examined them.

10 So it is pretty difficult to compare the two
11 because of lack of samples that are actually cracked.

12 But I feel like that our sizing techniques we
13 use in IGSCC, especially the use of L-wave transducers,
14 should be good in cast stainless because the L-wave
15 transducers will penetrate that material quite well.

16 So my feeling is we should be able to size
17 reasonably well cracking we find in centrifugally cast
18 stainless.

19 MR. REED: I am wondering why you said you
20 didn't have any specs.

21 Is it because the PWR doesn't
22 characteristically get into cracking or --

23 MR. EPPS: Yes, that's correct. As a matter
24 of fact, the crack samples we have seen came out of Batelle
25 Northwest Laboratories.

1 Some of the stories I heard about that
2 indicated that that material was quite difficult to crack,
3 even when you were trying to crack it. It's very tough.

4 Also, when we had the calibration standard
5 made from some of the actual centrifugally cast piping.

6 It was so tough that the machinist broke quite
7 a few tools trying to get the machining done on it.

8 They described the material as being gummy.
9 So it's very tough material and very difficult
10 to crack.

11 MR. EBERSOLE: Any questions?

12 MR. EPPS: Any more questions?

13 MR. THOMAS: If I may, Dr. Ebersole, I would
14 like to address this question of the Generic Letter 8328.

15 It's my understanding that that letter has to
16 do with the shunt trip. The question of AMSAC has to do
17 with the ATWS rule.

18 MR. WARD: That's right.

19 MR. THOMAS: So we are addressing those
20 separately.

21 In the case of the ATWS rule we are in
22 discussions with Westinghouse.

23 Obviously, we will put in a system to trip the
24 turbine and initiate the auxiliary feedwater pumps.

25 But the specific design we have not arrived

1 at.

2 We are, we have been working with Westinghouse
3 since the rule, and will arrive at which design, specific
4 design we will use which will be licensable.

5 MR. WARD: So the Salem fixes will be in the
6 plant before start up.

7 MR. THOMAS: Yes.

8 MR. WARD: You have got more time for the
9 ATWS --

10 MR. THOMAS: Yes. We are addressing the ATWS,
11 the AMSAC now.

12 We have filed a commitment to have the shunt
13 trip fixed in our plant.

14 Does that revolve that issue?

15 MR. WARD: Yes.

16 MR. EBERSOLE: I would just call out that
17 yesterday we were talking about this and about the
18 embarrassing events that happened at Sequoyah, where the
19 testing engineer used the M meter instead of the volt meter
20 probes.

21 I only pass this to you to say that
22 Westinghouse told us they were putting some new cards out
23 that will have internally protected fuses.

24 I guess this is an ongoing, active evolution of
25 this design assessment.

17 1 MR. THOMAS: We had heard of that. Thank
2 you, very much.

3 MR. EBERSOLE: Yes.

4 MR. THOMAS: If we have time, I would like
5 very much, we have about a 10 minute presentation on
6 quality assurance.

7 MR. EBERSOLE: Sure.

8 MR. THOMAS: By Mr. Paul Rice.

9 MR. EBERSOLE: Would you like to do that now?

10 MR. THOMAS: Yes, I would, please.

11 MR. EBERSOLE: Sure.

12 (Slide.)

13 MR. RICE: Good afternoon. I am Paul Rice,
14 Vice President and General Manager of the Quality Assurance
15 Organization.

16 I am here to give you information on the
17 quality assurance information and key factors we think are
18 important in the quality assurance program.

19 (Slide.)

20 Several of these key features which I am going
21 to cover, I am going to cover the organization, quality
22 assurance organization.

23 The experience, qualification, several
24 prevention oriented practices, audits assessments and the
25 management involvement of the Vogtle project in terms of

1 the quality assurance program.

2 (Slide.)

3 I will show you first the quality assurance
4 organization for the company. Then I am going to cover the
5 Vogtle project quality assurance organization on the next
6 slide.

7 A couple points on the quality assurance
8 organization.

9 I report to Mr. R. J. Kelly, who you have met,
10 Executive Vice President of Power Supply.

11 I have under me in the organization a Hatch
12 quality assurance organization which has approximately ten
13 years of operating experience at our PWR's.

14 Also, an engineering support staff which
15 provides resources technical and human resources in support
16 of both Hatch and Vogtle.

17 And we have not only the nuclear coverage, but
18 also in fossil and hydro activities.

19 MR. WARD: How many people are we talking
20 about altogether?

21 MR. RICE: Altogether in my organization it's
22 about 55.

23 (Slide.)

24 The Vogtle QA organization, and again,
25 umbrella'd by the Executive Vice President, Mr. Kelly,

1 myself.

2 The key focal point here is the Vogtle QA
3 manager who has under him an organization, Georgia Power
4 Company people, of the site construction quality assurance
5 department.

6 A staff which handles the project coordination
7 activities under the Vogtle project manager. We have put
8 into operation the quality assurance organization for
9 operations.

10 We began this about a year ago and consider
11 this a key point in that those people are in place and we
12 have started building and participating in the program
13 being developed by the operations folks when the plant goes
14 operational.

15 Also shown on the chart, umbrella'd by the
16 Vogtle quality assurance manager in terms of project
17 direction is Southern Company Services quality assurance
18 organization which provides us support in the areas of
19 vendor surveillance and audit programs.

20 They also provide us service in our oversight
21 of the architect engineer, Bechtel and Westinghouse.

22 The Bechtel quality assurance organization
23 which also receives project direction from my quality
24 assurance manager oversees the day to day activities of
25 Bechtel.

That quality assurance engineer that heads that organization is on site, just as is the quality assurance manager and the two managers for both construction and operation.

(Slide.)

Experience we think is a key factor in the success of our program. I wanted to make a couple points to show what that experience is.

Myself and the six managers under me have approximately 17 years a piece experience in the nuclear business including both commercial and military nuclear activities.

The three managers that I discussed involved in the Vogtle quality assurance organization have an average 13 years experience either at Vogtle or Hatch.

One key point is that the Vogtle QA site manager we have put into place for the operation of the plant has ten years of operational experience at Plant Hatch as the senior QA supervisor there.

Therefore, he brings with him the lessons learned and experience which we need to participate in the development of this program.

One point not on this chart. That is that I have four other people who are on long-term contract to us who I put into the organization with a background of test

1 experience.

2 They are test engineers from other projects.
3 I got them from Bechtel.

4 They have experience at ten other plants,
5 about 16 years experience total in that business.

6 They are in place to oversee and surveil in my
7 surveillance program the test program activities, including
8 construction testing and the pre-ops.

9 (Slide.)

10 Our training program has met the
11 qualifications of the QA training program. We have
12 instituted a formal five phase program of six to nine
13 months on the job training. It involves written
14 examinations, an oral examination administered by myself.
15 And it's rigorous.

16 The special training category, we are taking
17 advantage of the training programs operators go through.

18 We have started putting our people from the
19 operations QA program through that training.

20 In addition, I have one man now at Hatch who
21 has been there ten months from Vogtle who will return in
22 approximately two months into my quality assurance,
23 operational quality assurance department.

24 (Slide.)

25 Several features which I put into a category

1 under prevention oriented quality assurance involves the
2 procedures, developments.

3 This takes advantage for example of the
4 lessons learned in the case of the operational QA program
5 that is being developed, tries to factor in the things that
6 we know should be in there. The quality assurance
7 principles at the beginning.

8 We also do that for both construction and
9 operation.

10 The contractor programs, we oversee the
11 contractor programs in their entirety. We approve those
12 programs before work is allowed to proceed.

13 The operations program, I have mentioned that
14 a couple times.

15 One other point is that the QA organization at
16 Vogtle is directly involved in the test review and approval
17 process, in the plant review board process. And QA will be
18 involved in the safety review board process.

19 Yes, sir?

20 MR. REED: Mr. Rice, you mentioned the size of
21 your QA organization and it's for Southern Services, I
22 guess. It is for both Hatch and --

23 MR. RICE: No. The number I gave is the
24 organization under myself which is just Georgia Power
25 Company people.

1 I did not give you the number of quality
2 assurance people who are in support of our activitys in
3 Southern --

4 MR. REED: I think that is what I wanted to
5 get at.

6 I was wondering what the QA activities are for
7 off-site manufactured goods.

8 And does that come under your organization?
9 How does it interface with the Plant Vogtle
10 QA?

11 MR. RICE: Activities such as vendor
12 surveillance and auditor programs and qualification, those
13 activities come under control of my quality assurance
14 manager for Vogtle.

15 They are principally carried out by Southern
16 Company Services, although Bechtel has provided over the
17 life of the project the services of the vendor programs and
18 their qualification and qualifications and auditing, too.
19 I don't have the total number of people --

20 MR. REED: So it's mostly contracted, your
21 off-site manufacturer, QA surveillance activity?

22 MR. RICE: Services provided by Bechtel in the
23 procurement of the equipment, yes, in that sense it is.

24 I don't consider it contracted in terms of the
25 services provided to us by Southern Company Services. All

1 of the activities come under control though of the Vogtle
2 quality assurance manager. All of the activities.

3 (Slide.)

4 In the area of audits assessments and
5 surveillances, we have conducted approximately 900 audits,
6 under the quality assurance managers umbrella.

7 That includes those conducted by quality
8 assurance organization and of newly formed operations, also
9 Southern Company Services and Bechtel.

10 We have tried all along to incorporate certain
11 innovative prevention oriented feature such as taking
12 audits, turning them into vertical slices in some case,
13 using horizontal applies slices where applicable.

14 We have brought in technical experts where we
15 have done design audits and the outside expertise was
16 needed.

17 We have tried to carry out the audit program
18 in a pro-active prevention oriented manner.

19 In the case of surveillance activities, we
20 have a well-developed surveillance program. And it will be
21 in effect in operation at Plant Vogtle.

22 One good example of that is a very detailed
23 surveillance program for the testing activities including
24 preoperation preoperational tests that will take place from
25 now until the test program is over.

1 MR. EBERSOLE: May I ask you a question?

2 MR. RICE: Yes, sir.

3 MR. EBERSOLE: Quality assurance procedures
4 are suppose to ultimately culminate in a quality product.

5 I guess I could say you could audit a quality
6 assurance program and find out that all the paper was in
7 beautiful order.

8 But unfortunately, there was no terminal
9 result in the context of the final needed product. You
10 know, the valve was still bad.

11 MR. RICE: Yes, sir.

12 MR. EBERSOLE: You might have inferred it was
13 good because of the paper record. But then it was found
14 factually it wasn't any good.

15 How often do you validate the quality assurance
16 of the quality assurance process?

17 MR. RICE: The point is a very good one. It's
18 one we have recognized for a long time.

19 I think probably it is one which in the
20 history of quality assurance people have focussed on the
21 procedures and paperwork to the exclusion of the process
22 itself.

23 One of the things we have done in our
24 organization is we have gone to the methods to where we
25 actually have a discipline in dividing up the audited

1 activity such that a certain percentage.

2 And it can be adjusted, because some areas are
3 more paper related. But dividing up the audit activity to
4 concentrate at least to the third of the effort on looking
5 at inprocess work activities called activity oriented
6 auditing.

7 A third of the effort in discussing, talking
8 to people in conducting interviews. A third to looking at
9 the records and record keeping activities.

10 That is just an example. It doesn't always
11 work out in thirds. But we have recognized that to be a
12 problem and have attacked it.

13 The surveillance program was another means of
14 attacking the problem in that the program more focuses on
15 putting the man with the knowledge, the experience and
16 abilities out in the field where he can look look at the
17 activities and see what is going on, as opposed to the
18 overhead work which sometimes goes with the audit program
19 and its requirements.

20 The surveillance program tends to eliminate
21 the very problem you point out.

22 MR. REED: I don't know what you mean by
23 surveillance.

24 Perhaps you mean quality control.

25 MR. RICE: No, I am not discussing quality

1 control.

2 Quality control at the Vogtle project is under
3 the vice president of the project.

4 The surveillance that I am talking to is a
5 surveillance program set up within my organization which
6 compliments the audit business in terms of the activity
7 oriented type looks and reviews by my people.

8 MR. REED: I am not unhappy to hear that
9 quality control is under the project manager, general
10 superintendent of the plant, because I think quality
11 control belongs with the skilled people.

12 I think that only skilled people, skilled
13 machinists and so on, can really QC an item for its being
14 properly manufactured, welded or what not, or fabricated,
15 put together in a plant.

16 In fact I have heard the Nuclear Regulatory
17 people say many companies over-reacted to the rules that
18 came out on quality assurance and quality control and
19 tended to take quality control out of the plants and out of
20 the skilled people's domain, out of the information man's
21 domain.

22 So I have no criticism of the way you are
23 organized.

24 MR. RICE: I appreciate your comment.

25 It's been our philosophy in the company of

1 just what you are saying.

2 The quality control organization needed to be
3 formed from the basis of the people in the line
4 organization and worked through that management chain.

5 MR. WARD: Let me ask you a question related
6 to what Mr. Ebersole had asked about.

7 Earlier this afternoon we heard the
8 presentation by Mr. Ramsey about the readiness review.

9 MR. RICE: Yes, sir.

10 MR. WARD: I guess to the extent that that
11 process turned up some, seemed not to turn up anything real
12 exciting, but to the extent it turned up some problems
13 those could be viewed as failures of the QA process,
14 perhaps.

15 If they can be viewed in that way, have you,
16 are you factoring that experience back into your QA program
17 in making any corrections or changes?

18 MR. RICE: Yes, we are. I can give you an
19 example of how that is true.

20 One of the things Bill Ramsey described to you
21 was a technique for looking at the concrete activities,
22 going back over the history, looking at a pour and all the
23 activities. Including the scales in the batch plant, for
24 example.

25 One of the things I did was we went back and

1 evaluated the process and looked at the kinds of items
2 found there and discovered an interesting point.

3 That is that most of the audit activities, I
4 think this is typical and not necessarily bad, most of the
5 audit activities take on an activity that is either in
6 process, and look at the activities as they occur.

7 One of the things that technique misses we
8 concluded was when you go back and look at history, from
9 two years ago, the documentation which was easily retrieve
10 able at the time because the man was there following the
11 activities when it was being processed, that, what happened
12 to that documentation over the next three years does not
13 get checked from the audit that was conducted in 1981 , for
14 example.

15 We take pride in the fact we factor in these
16 lessons and the lessons we have learned from other plants,
17 from reading the NRC reports, going ourselves and
18 investigating at other plants that have had other problems,
19 and factoring those lessons into our program.

20 The last pointed I wanted to make in terms of
21 the quality assurance program had to do with management
22 involvement.

23 (Slide.)

24 I think that is a key factor on the Vogtle
25 project. On a day to day basis the project management at

1 the site participates in the quality assurance program.
2 The problems that arise, audit findings, readiness review
3 process, quality concern program. Many of the decisions
4 that are made on a day to day basis having effects on
5 quality assurance.

6 In the quality assurance department area in
7 terms of management involvement we have our Vogtle quality
8 assurance manager at the site. He is a member of the staff
9 of Mr. Foster, Vice President of the Vogtle project.

10 In being on that staff he is kept informed,
11 stays informed on a daily basis, is aware of the activities
12 that are current.

13 Therefore, we know what areas that we have the
14 most interest in.

15 At the corporate level the management
16 involvement I believe is significant.

17 Corporate involvement also exists in terms of
18 the readiness review program Mr. Ramsey mentioned the
19 board, Readiness Review Board. I am a member of that
20 board.

21 Other corporate vice presidents are members of
22 that board.

23 The quality concern program has overview from
24 corporate officers.

25 We have the quality assurance committee which

1 is headed by Mr. Kelly has a number of senior company
2 officials on that board which advise him on matters of
3 quality assurance, and at least quarterly review the
4 activity.

5 I guess also you have to include the project
6 board which is comprised of or headed by Mr. Shearer, our
7 CEO.

8 It includes our president, a number of senior
9 officers and partners and officers from Bechtel and
10 Westinghouse.

11 That board meets routinely monthly and covers
12 not only status and progress and budget type matters, but
13 has specific quality assurance indicators that they follow
14 and discuss the quality assurance problems that are going
15 on and their solutions.

16 So I consider the management involvement on
17 this project is significant in terms of effective quality
18 assurance program.

19 Those are the points that I wanted to cover.

20 I would be glad to answer any questions.

21 MR. WARD: I guess the ultimate in management
22 involvement would be to have QA as a line organization
23 function.

24 Is that --

25 MR. RICE: I think I guess I would have to

1 answer that saying that I believe it is in our company. It
2 is a line organization.

3 Mr. Foster and I, for example, work closely
4 and in parallel on many problems. The interface between he
5 and I in terms of taking on the tough issues or potential
6 hard problems that come up, you would have a hard time
7 telling that we were working both up two different chains
8 in the company.

9 The Q A in our organization, that goes down
10 the line, too. Vogtle quality assurance manager being a
11 member of Mr. Foster's staff, as I mentioned, brings that
12 together very close.

13 If you go on down into the quality assurance
14 manager positions such as for construction or operations,
15 you find a very good working relationship with the line
16 organization, very close working relationship.

17 There is no antagonism. It is very healthy
18 situation.

19 MR. WARD: If there was not a requirement or
20 procedure requirement by the NRC to have a separate QA
21 organization, do you think Georgia Power would move more
22 toward really a QA as a line function, or do you think
23 there is value in the separate organizations?

24 Does your experience indicate there is value
25 in it?

1 MR. RICE: I don't have a base to compare the
2 two situations.

3 I think that you have to look at each
4 situation that you have, each plant you have, each
5 organization, each corporate organization.

6 I think in Georgia Power Company you could
7 work very well either way.

8 It has not been done that way, so I have a
9 hard time making that comparison.

10 I personally believe with the attitudes and
11 working relationships that go on that would not be a
12 problem. We work very well in our company.

13 Any other questions?

14 MR. EBERSOLE: Thank you, Mr. Rice.

15 Mr. Thomas, was this intended to be what was
16 identified as quality concerns?

17 MR. THOMAS: No. Quality concerns would be a
18 separate presentation. Tomorrow.

19 MR. EBERSOLE: This was an extra feature?

20 MR. THOMAS: Yes. It was item D under
21 organization and philosophy.

22 MR. EBERSOLE: I see. I didn't see it here.

23 Well, I think we are doing quite well on the
24 schedule here.

25 It's now ten of six. I believe it's in order

1 we adjourn the meeting today and pick up the first topics
2 tomorrow.

3 ' Before I do this, out there somewhere, hold up
4 your hand, is an attendee list. Who has it?

5 We would like to get all the names here. I
6 don't know how it's going to be managed.

7 John, why don't you figure out how to do that.

1 8 MR. McKINLEY: Anybody who hasn't signed it,
9 see me.

10 MR. EBERSOLE: There you go. I guess that can
11 be freestyle.

12 MR. THOMAS: 8:30 tomorrow morning?

13 MR. EBERSOLE: I was going to leave it the way
14 it was. Yes.

15 I thank all of you for coming today.

16 (Whereupon, at 5:50 p.m., the meeting of the
17 Subcommittee was recessed, to resume at 8:30 a.m. the
18 following day.)
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23
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25

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING: ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
SUBCOMMITTEE ON VOGTLE ELECTRIC GENERATING
PLANT, UNITS 1 AND 2

DOCKET NO.:

PLACE: AUGUSTA, GEORGIA

DATE: THURSDAY, JULY 18, 1985

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

(sig) *Craig L Knowles*
(TYPED)

CRAIG L. KNOWLES
Official Reporter
ACE-FEDERAL REPORTERS, INC.
Reporter's Affiliation

A

PRESENTATION TO ACRS SUBCOMMITTEE

ON VOGTLE 1 OPERATING LICENSE

JULY 18, 1985

By: M.V. Sinkule

Projects Section Chief

Region II, NRC

OUTLINE

INTRODUCTION

HISTORY OF NRC INSPECTION EFFORTS AT VOGTLE

OPEN CONSTRUCTION ITEMS

RESULTS OF SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

OPERATIONAL READINESS INSPECTIONS

SUMMARY

INSPECTION PROGRAM FOR CONSTRUCTION

SITE PREPARATION

GEOTECHNICAL/FOUNDATION ACTIVITIES

STRUCTURES

STRUCTURAL CONCRETE
STRUCTURAL STEEL & SUPPORTS

CONTAINMENT

PENETRATIONS
STRUCTURAL CONCRETE
STEEL STRUCTURES & SUPPORTS

REACTOR VESSEL AND COMPONENTS

REACTOR COOLANT PRESSURE BOUNDARY

SAFETY-RELATED PIPING AND SUPPORTS

MECHANICAL EQUIPMENT & COMPONENTS

ELECTRICAL EQUIPMENT & SYSTEMS

INSTRUMENTATION SYSTEMS

WELDING AND NON-DESTRUCTIVE EXAMINATIONS - ALL SYSTEMS

CONTAINMENT STRUCTURAL INTEGRITY TEST

LOW LEVEL RADIOACTIVE WASTE STORAGE

PRESERVING INSPECTION PROGRAMS

ENVIRONMENTAL PROTECTION

EVENTS

STAFF HOURS EXPENDED ON VOGTLE

<u>YEAR</u>	<u>NO. OF INSPECTIONS</u>	<u>NRC STAFF HOURS</u>
1975		
1976	2	9
1977	5	164
1978	10	262
1979	19	281
1980	16	178
1981	15	530
1982	29	1246
1983	24	1654
1984	37	1578
1985	23	1828

VOGTLE 1 TOTAL - 8010

VOGTLE 2 TOTAL - 4522

VOGTLE SITE 12,532 HRS.

SPECIAL INSPECTIONS

FOLLOW-UP OF LICENSEE SELF INITIATED AUDIT, RPT. 83-12

CONSTRUCTION APPRAISAL, RPT. 83-13

MECHANICAL AND WELDING TEAM INSPECTION, RPT. 84-36

ELECTRICAL TEAM INSPECTION, RPT. 85-20

ENFORCEMENT HISTORY

YEAR	SEVERITY LEVEL 4	SEVERITY LEVEL 5	DEVIATION FROM COMMITMENT
1977	INF		
1978		DEF	
1979	7	1	1
1980	2	1	
1981		16	
1982	3	4	1
1983	4	5	
1984	11	8	
1985	<u>12</u>	<u>4</u>	<u> </u>
	40	40	2

VOGTLE 1 TOTAL = 82

OPEN ITEMS

- REGIONAL TRACKING SYSTEM
- CONSTRUCTION DEFICIENCIES
- NON-COMPLIANCE ITEMS
- OTHER OPEN ITEMS
 - UNRESOLVED ITEMS
 - INSPECTOR FOLLOW UP ITEMS
 - ALLEGATIONS
 - IE BULLETINS

INSPECTION AND ENFORCEMENT BULLETINS

- 79-02 PIPE SUPPORT BASE PLATE DESIGNS USING CONCRETE EXPANSION ANCHOR
BOLTS
- 79-14 SEISMIC ANALYSIS FOR AS-BUILT SAFETY-RELATED PIPING SYSTEMS
- 81-02 FAILURE OF GATE VALVES TO CLOSE AGAINST DIFFERENTIAL PRESSURE

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

APRIL 1, 1979 - AUGUST 31, 1980

- GPC RESPONSIVE TO NRC FINDINGS
- HEALTHY ATTITUDE TOWARD NRC REGULATIONS
- PROMPT ACTION ON CORRECTING SIGNIFICANT ITEMS
- NO CHANGE IN RECOMMENDED INSPECTION EFFORT

JULY 1, 1980 - JUNE 30, 1981

- NO STRONG OR WEAK AREAS IDENTIFIED
- NO CHANGE RECOMMENDED IN INSPECTION EFFORT

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

JULY 1, 1981 - OCTOBER 31, 1982

- MAJOR STRENGTHS - CONTAINMENT AND OTHER SAFETY RELATED STRUCTURES
 - LICENSING ACTIVITIES
- NON-COMPLIANCE ITEMS WERE NOT INDICATIVE OF PROGRAMMATIC BREAK DOWN

NOVEMBER 1, 1982 - OCTOBER 31, 1983

- LICENSEE CONTINUES TO IMPLEMENT A VIGOROUS CONSTRUCTION PROJECT MANAGEMENT EFFORT WITH WELL QUALIFIED AND EXPERIENCED PERSONNEL
- MAJOR STRENGTHS - QA PROGRAM
 - SAFETY RELATED COMPONENTS
- NON-COMPLIANCE ITEMS WERE NOT INDICATIVE OF PROGRAM BREAKDOWN

REGIONAL INSPECTION EFFORT REMAINING

- COMPLETE CONSTRUCTION PROGRAM
- READINESS REVIEW PROGRAM
- PREOPERATIONAL TESTING
- SYSTEMS WALKDOWN
- TECHNICAL SPECIFICATIONS REVIEWS
- OPERATIONAL PROCEDURES REVIEW
- OPERATOR LICENSING
- INSPECTION REPORT REVIEW
- TRACK AND CLOSE OPEN ITEMS

SUMMARY

- CONSTRUCTION INSPECTION PROGRAMS ARE ON SCHEDULE.
- DO NOT ANTICIPATE FOLLOW-UP OF OPEN ITEMS THAT ARE CURRENTLY ON THE BOOKS TO BE A PROBLEM.
- LICENSEE MANAGEMENT IS RESPONSIVE TO NRC FINDINGS.
- LICENSEE MANAGEMENT ENSURES THAT THOROUGH ELEVATIONS ARE PERFORMED.
- LICENSEE MANAGEMENT HAS IMPLEMENTED ADEQUATE PROGRAMS TO ENSURE QUALITY OF THE PLANT.
- OPERATING LICENSE RECOMMENDATION CONTINGENT ON COMPLETION OF INSPECTION PROGRAM.

TOXIC GAS PROTECTION OF THE CONTROL ROOM OPERATORS

O THREE CHEMICALS

- AMMONIA
- HYDRAZINE
- CHLORINE

O TWO ISSUES

- THE APPLICANT'S PROPOSED DESIGN AND OPERATING ENVELOPE DEVIATES FROM REGULATORY GUIDE 1.95.
 - VOGTLE CONTROL ROOM ISOLATION AIR EXCHANGE RATE IS 0.5 AIR CHANGES PER HOUR VERSUS R. G. VALUE OF 0.06
- THE APPLICANT HAS NOT COMPLIED WITH POSITION C.13 OF REGULATORY GUIDE 1.78
 - PROCEDURES SHOULD REFLECT OPERATOR TRAINING TO DISTINGUISH THE SMELL OF HAZARDOUS CHEMICALS PECULIAR TO THE AREA AND THAT DRILLS ARE SET UP TO ENSURE THAT PERSONNEL CAN DON BREATHING APPARATUS WITHIN TWO MINUTES

STATUS

- 0 THE APPLICANT HAS SUBMITTED JUSTIFICATION FOR THE DEPARTURE FROM REGULATORY GUIDE 1.95 AND THIS JUSTIFICATION IS CURRENTLY UNDER REVIEW BY THE STAFF.
- 0 THE APPLICANT HAS NOT RESPONDED TO THE SECOND ITEM.
- 0 A MEETING HAS BEEN SET UP WITH THE APPLICANT TO DISCUSS BOTH ITEMS.

NRR STAFF PRESENTATION TO THE ACRS

SUBJECT: Vogtle Electric Generating Plant, Units 1 and 2

DATE: July 18, 1985

PRESENTER: Melanie A. Miller

PRESENTER'S TITLE/BRANCH/DIV: Project Manager, Licensing Branch No. 4,
Division of Licensing

PRESENTER'S NRC TEL. NO.: 492-4259

SUBCOMMITTEE: Vogtle

LICENSING OVERVIEW

CONSTRUCTION PERMIT ISSUED	JUNE 28, 1974
FSAR DOCKETED	SEPTEMBER 16, 1983
ENVIRONMENTAL REPORT DOCKETED	NOVEMBER 28, 1983
DES ISSUED	OCTOBER 1984
FES ISSUED	MARCH 1985
SER ISSUED	JUNE 1985

- ° 14 OPEN ITEMS
- ° 50 CONFIRMATORY ITEMS
- ° 11 LICENSE CONDITIONS

OPEN ITEM 3 CONTAINMENT SUMP

ISSUE: THE APPLICANT HAS NOT MET THE GUIDELINES OF RG 1.82, REVISION 0, NOR SHOWN THAT UNACCEPTABLE BLOCKAGE CONDITIONS WOULD NOT OCCUR

- ° RG 1.82 APPROACH VELOCITY CRITERIA OF 0.2 FT/SEC HAS BEEN EXCEEDED
- ° AT THIS VELOCITY, 50% BLOCKAGE OF SCREENS MAY NOT BE CONSERVATIVE PARTICULARLY SINCE FIBERGLASS INSULATION IS USED
- ° THERE ARE 4 SHALLOW SUMPS WITH SMALL DEBRIS SCREEN AREAS

RESOLUTION: THE APPLICANT IS REANALYZING THE DEBRIS BLOCKAGE POTENTIAL AND POSSIBLE IMPACT ON NPSH MARGINS IN THE POST-LOCA PERIOD

A SUBMITTAL FROM THE APPLICANT IS ANTICIPATED IN EARLY SEPTEMBER 1985.

OPEN ITEM 4 TOXIC GAS EVALUATION OF CHEMICALS

ISSUE: THE APPLICANT HAS NOT COMPLIED WITH THE GUIDELINES OF RG 1.95 NOR PROVIDED ADEQUATE JUSTIFICATION FOR NOT DOING SO.

RESOLUTION: THE APPLICANT'S TECHNICAL BASIS IS CURRENTLY UNDER STAFF REVIEW. THE STAFF AND APPLICANT WILL CONTINUE TO DISCUSS THIS ISSUE.

OPEN ITEM 5 GENERIC LETTER 83-28

ISSUE: THE APPLICANT OWES THE STAFF INFORMATION ON 7 ITEMS IN THE GENERIC LETTER INCLUDING THE 13 PLANT-SPECIFIC QUESTIONS RELATED TO THE AUTOMATIC REACTOR TRIP USING SHUNT COIL TRIP ATTACHMENT.

THE STAFF HAS THE APPLICANT'S RESPONSES ON 3 ITEMS UNDER REVIEW.

RESOLUTION: THE STAFF WILL CONTINUE TO DISCUSS THIS ISSUE WITH THE APPLICANT. THE APPLICANT WILL PROVIDE ADDITIONAL INFORMATION IN DECEMBER 1985.

OPEN ITEM 9 TRAINING OF EMERGENCY DIESEL GENERATOR PERSONNEL

ISSUE: STAFF CONCERNED ABOUT HANDS-ON EXPERIENCE
 OF REPLACEMENT DIESEL GENERATOR MAINTENANCE
 PERSONNEL.

RESOLUTION: APPLICANT COMMITTED TO ACCOMPLISH DIESEL
 ENGINE MAINTENANCE UNDER DIRECTION OF AN
 INDIVIDUAL WHO IS QUALIFIED TO PERFORM
 THE TASKS.

STATUS: RESOLVED

OPEN ITEM 10 DIESEL FUEL OIL STORAGE TANK
CATHODIC PROTECTION

ISSUE: APPLICANT DOES NOT PROPOSE TO PROVIDE CATHODIC
PROTECTION FOR BURIED FUEL OIL STORAGE TANKS
AND ASSOCIATED PIPING

THE APPLICANT HAS STATED THAT

- ° CORROSION BY ELECTROLYSIS WILL NOT OCCUR
 BECAUSE OF THE SOIL CONDITIONS AND WATER
 TABLE AT VOGTLE
- ° COAL TAR EPOXY COATING WILL BE ADEQUATE
 PROTECTION

RESOLUTION: THE STAFF REQUESTED THE APPLICANT TO PROVIDE
SUPPORTING DATA. THE APPLICANT RECENTLY
COMPLETED A TESTING PROGRAM.

STATUS: THE APPLICANT PLANS TO SUBMIT ITS REPORT IN
EARLY AUGUST 1985.

OPEN ITEM 11 LICENSEE QUALIFICATIONS FOR OPERATIONS

ISSUES

- ° VISIT TO CORPORATE OFFICE
- ° PLANT REVIEW BOARD INVESTIGATION OF VIOLATION OF TECHNICAL SPECIFICATIONS
- ° CORPORATE REPORTING LEVEL FOR INDEPENDENT SAFETY ENGINEERING GROUP TOO LOW
- ° INDEPENDENT REVIEW BY QUALIFIED PERSONNEL OF PROCEDURES AND PROGRAMS THAT AFFECT NUCLEAR SAFETY
- ° POSITIONS FOR USE OF SHIFT TURNOVER CHECKLISTS AND PROVISIONS FOR THEIR USE

RESOLUTION: THE STAFF WILL CONTINUE TO DISCUSS THESE ITEMS WITH THE APPLICANT

OPEN ITEM 12 RETESTING OF SIMULATOR RESPONSE
(NUREG-0737, ITEM I.A.2.1)

ISSUE: THE APPLICANT HAS NOT FULLY COMPLIED WITH
 RG 1.149 WITH RESPECT TO SIMULATOR
 PERFORMANCE TESTING

RESOLUTION: THE STAFF AND APPLICANT WILL CONTINUE TO
 DISCUSS THE ISSUE

LICENSE CONDITION 4

TECHNICAL SPECIFICATION FOR MAXIMUM PERMISSIBLE TEMPERATURE MISMATCH

- ° REQUIREMENT FOR A TECHNICAL SPECIFICATION ON THE MAXIMUM PERMISSIBLE TEMPERATURE MISMATCH BETWEEN THE PRIMARY AND SECONDARY SYSTEMS BEFORE A REACTOR COOLANT PUMP MAY BE STARTED
- ° THIS IS A STANDARD REQUIREMENT FOR WESTINGHOUSE PLANTS
- ° GENERIC ANALYSIS HAS SHOWN THAT A TEMPERATURE DIFFERENCE OF LESS THAN 50°F WILL NOT EXCEED PRIMARY SYSTEM PRESSURE LIMITS IF A REACTOR COOLANT PUMP IS STARTED
- ° THE STAFF IS AWAITING A PLANT-SPECIFIC ANALYSIS

LICENSE CONDITION FOR OPERATING EXPERIENCE ON SHIFT

TO ENSURE THAT THE APPLICANT MEETS THE APPROPRIATE LEVEL
OF OPERATING EXPERIENCE FOR LICENSING

- ° 1 SRO PER SHIFT HAS 6 MONTHS HOT PARTICIPATION
EXPERIENCE AT A SIMILAR FACILITY
- ° 1 SRO PER SHIFT HAS STARTUP AND SHUTDOWN EXPERIENCE
- ° 2 SROS PER SHIFT HAVE 6 WEEKS EXPERIENCE AT GREATER
THAN 20% POWER

SEVERAL ISSUES DIFFICULT TO RESOLVE

- ° FOUNDATION COMPETENCY OF CLAY MARL STRATUM
- ° VERIFICATION OF FSAR COMMITMENTS ON COMPACTION OF CATEGORY 1 BACKFILL
- ° TRAINING PROGRAM

FOUNDATION COMPETENCY OF CLAY MARL STRATUM

ISSUES

- ° NO CORE SAMPLES OF CLAY MARL IN POWER BLOCK AREA AVAILABLE FOR STAFF INSPECTION
- ° WIDE VARIATION IN ENGINEERING PROPERTIES OF CLAY MARL
- ° UNUSUALLY LARGE SETTLEMENT FOR HEAVIER PLANT STRUCTURES FOUNDED ON THE MARL

RESOLUTION

- ° APPLICANT DRILLED 6 NEW BOREHOLES IN THE CLAY MARL AND RETAINED CORES FOR STAFF INSPECTION
- ° EVALUATION OF SETTLEMENT RECORDS SHOWS NO ADVERSE DIFFERENTIAL SETTLEMENT PROBLEMS
- ° A LONG-TERM SETTLEMENT MONITORING PROGRAM HAS BEEN ESTABLISHED

VERIFICATION OF FSAR COMMITMENTS ON COMPACTION OF CATEGORY 1 BACKFILL

ISSUE: DEMONSTRATE THAT THE 90 FEET THICK DEPTH OF CATEGORY 1 BACKFILL WAS PROPERLY COMPACTED, APPROXIMATELY 5,000,000 CUBIC YARDS OF BACKFILL WAS PLACED.

LABORATORY DETERMINED MAXIMUM DRY DENSITIES APPEARED LOW

RESOLUTION: CONFIRMATORY TESTING PROGRAM INITIATED IN JUNE 1984, RESULTS SHOWED THAT A VIBRATORY COMPACTION TEST STANDARD WAS MORE APPROPRIATE FOR ESTABLISHING THE MAXIMUM DRY DENSITIES FOR THE CLEANER BACKFILL MATERIALS. FSAR COMMITMENTS WERE STILL MET.

STANDARD PENETRATION TESTS RESULTED IN BLOW COUNTS IN EXCESS OF 100 PER FOOT SHOWING A UNIFORM, WELL-COMPACTED FILL.

TRAINING PROGRAM

- ° INITIAL TRAINING PROGRAM
- ° LICENSED OPERATOR REQUALIFICATION TRAINING PROGRAM
- ° TRAINING FOR NONLICENSED PLANT STAFF
- ° FIRE PROTECTION TRAINING
- ° SHIFT TECHNICAL ADVISOR TRAINING

READINESS REVIEW

VEGP ACRS

18 & 19 AUGUST, 1985

W. C. RAMSEY, JR.

MANAGER - READINESS REVIEW

SOUTHERN COMPANY SERVICES

BACKGROUND

- **HISTORICAL PROBLEMS**
- **NRC REPORT TO CONGRESS (NUREG-1055)**

CURRENT GPC/NRC READINESS ACTIONS

GEORGIA POWER COMPANY

- INPO EVALUATION
- SELF-INITIATED EVALUATIONS
- INTERNAL AUDITS
- SPECIAL MANAGEMENT APPRAISALS

NUCLEAR REGULATORY COMMISSION

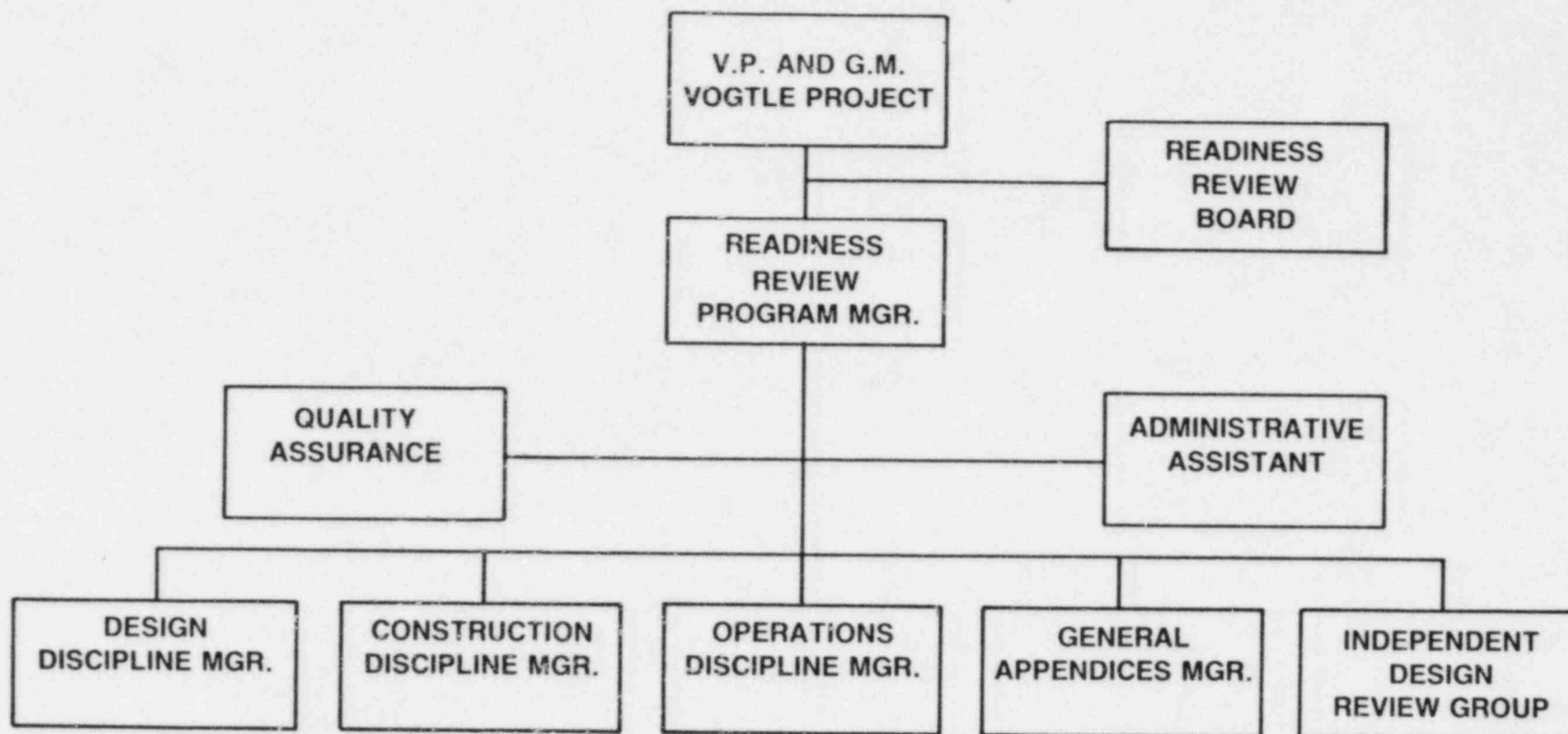
- REGION AND RESIDENT INSPECTION
- REGIONAL AND HEADQUARTERS TEAM INSPECTIONS
- CAT INSPECTIONS
- INTEGRATED DESIGN INSPECTIONS
- INDEPENDENT THIRD PARTY REVIEWS

READINESS REVIEW PROGRAM

OBJECTIVE

- **GPC IN-DEPTH SELF ASSESSMENT**
- **NRC REVIEW AND ACCEPTANCE**

VOGTLE READINESS REVIEW PROGRAM



PRELIMINARY IMPLEMENTATION SCHEDULE

[illegible]

PLANT VOGTLE GENERIC FUNCTIONS

I. CIVIL

II. MECHANICAL

III. ELECTRICAL

IV. READINESS FOR OPERATION

PLANT VOGTLE - WORK AREAS

I. CIVIL

CONCRETE/REBAR/CADWELDS
STRUCTURAL STEEL/EMBEDS/WELDING
BACKFILL/COATINGS/POST TENSIONING

II. MECHANICAL

NSSS/FUEL HANDLING EQUIPMENT
PIPE HANGERS/SUPPORTS
PIPING/VALVES/PUMPS
HVAC/FIRE PROTECTION
INSTRUMENTATION & CONTROLS

III. ELECTRICAL

RACEWAYS
CABLES/TERMINATIONS
EQUIPMENT
HANGERS/SUPPORTS

IV. READINESS FOR OPERATION

INITIAL TEST PROGRAM
OPERATIONS ORGAN. & ADMIN
OPERATIONS TRAINING & QUAL.
PLANT OPERATIONS
RAD. PROTECTION & CHEMISTRY
EMERGENCY PREPAREDNESS
OPERATIONS TECHNICAL SUPPORT
PLANT MAINTENANCE

GENERAL APPENDICES

- A. ORGANIZATION
- B. DESIGN CONTROL
- C. PROCUREMENT
- D. DOCUMENT CONTROL
- E. MATERIAL CONTROL
- F. INSPECTOR QUALIFICATION/CERTIFICATION
- G. MEASURING AND TEST EQUIPMENT
- H. NONCONFORMANCES
- I. PROJECT QUALITY ASSURANCE ORGANIZATION
- J. EQUIPMENT QUALIFICATION
- K. CONSTRUCTION COMPLETION

READINESS REVIEW PROCESS

- **MODULE PREPARATION**
- **SELF - ASSESSMENT**
- **NRC REVIEW**
- **PROBLEM RESOLUTION AND WORK ACCEPTANCE**

MODULE PREPARATION

- INTRODUCTION
- ORGANIZATION AND DIVISION OF RESPONSIBILITIES
- COMMITMENTS
- PROGRAM DESCRIPTION
- AUDITS AND SPECIAL INVESTIGATIONS
- PROGRAM VERIFICATION
- INDEPENDENT DESIGN REVIEW
- ASSESSMENT

SELF ASSESSMENT

- **COMMITMENT VERIFICATION**
- **CONSTRUCTION VERIFICATION**
- **DESIGN VERIFICATION**
- **INDEPENDENT DESIGN REVIEW**
- **READINESS REVIEW BOARD ASSESSMENT**

NRC REVIEW

- **GPC PRESENTATION OF MODULE**
- **NRC PROGRAM REVIEW**
- **NRC WORK REVIEW**

PROBLEM RESOLUTION AND WORK ACCEPTANCE

- **NRC IDENTIFIES TO GPC ANY AREAS OF CONCERN.**
- **GPC CONDUCTS AN IN-DEPTH INVESTIGATION INTO THE AREA OF CONCERN AND CORRECTS PROBLEMS.**
- **NRC ACCEPTS THE SCOPE OF WORK COVERED BY THE READINESS REVIEW MODULE.**

INDEPENDENT DESIGN REVIEW PHILOSOPHY

- SYSTEM AND SUBJECT REVIEW
- ADDITIONAL REVIEW SAMPLES TO ENCOMPASS SIGNIFICANT DESIGN PROCESSES
- CONCENTRATE REVIEW IN INTERFACE AREAS
- STRUCTURAL DESIGN ASPECTS IDRs IN MODULES
- REVIEW BY PERSONS INDEPENDENT OF RESPONSIBILITY FOR THE WORK

READINESS REVIEW PROGRAM CLASSIFICATION OF FINDINGS

- LEVEL I VIOLATION OF LICENSING COMMITMENTS,
PROJECT PROCEDURES OR ENGINEERING
REQUIREMENTS WITH INDICATION OF
SAFETY CONCERNS**

- LEVEL II VIOLATION OF LICENSING COMMITMENT OR
ENGINEERING REQUIREMENTS WITH NO
SAFETY CONCERNS**

- LEVEL III VIOLATION OF PROJECT PROCEDURES
WITH NO SAFETY CONCERNS**

SCHEDULE MODULE TO NRC

JUNE 25, 1985

<u>NO.</u>	<u>MODULE TITLE</u>	<u>SCHEDULED NRC ISSUE</u>	<u>FORECAST/ ACTUAL</u>
1	CONCRETE, REBAR AND CADWELDS		03/14/85A
2.	OPERATIONS TRAINING AND QUALIFICATION	07/26/85	07/26/85F
3.A.	INITIAL TEST PROGRAM, PREOPERATIONAL TEST PHASE	04/26/85	05/01/85A
3.B.	INITIAL TEST PROGRAM, STARTUP TEST PHASE	02/07/86	02/07/86F
4.	MECHANICAL EQUIPMENT, PIPING AND COMPONENTS	05/10/85	06/14/85A
5.	OPERATIONS ORGANIZATION AND ADMINISTRATION	06/12/85	07/12/85F
6.	ELECTRICAL EQUIPMENT	05/24/85	OPEN
7.	A. PLANT OPERATIONS	09/20/85	09/20/85F
	B. PLANT SECURITY		
8.	STRUCTURAL STEEL	06/28/85	07/26/85F
9.	A. RADIOLOGICAL PROTECTION	10/04/85	10/04/85F
	B. CHEMISTRY		
10.	OPERATIONS TECHNICAL SUPPORT	11/15/85	11/15/85F
11.	PIPE SUPPORTS	07/01/85	11/01/85F
12.	ELECTRICAL CABLES AND TERMINATIONS	12/06/85	12/06/85F
13.	A. FOUNDATIONS AND BACKFILL	09/06/85	09/06/85F
	B. COATINGS		
	C. POST-TENSIONING		

SCHEDULE MODULE TO NRC (Continued)

JUNE 25, 1985

<u>NO.</u>	<u>MODULE TITLE</u>	<u>SCHEDULED NRC ISSUE</u>	<u>FORECAST/ ACTUAL</u>
14.	PLANT MAINTENANCE	12/20/85	12/20/85F
15.	EMERGENCY PREPAREDNESS	10/18/85	10/18/85F
16.	NSSS	08/09/85	08/09/85F
17.	RACEWAYS	08/23/85	08/23/85F
18.	A. HVAC	01/03/86	01/03/86F
	B. FIRE PROTECTION		
	C. DIESEL GENERATORS		
	D. RADWASTE		
19.	ELECTRICAL SUPPORTS	02/21/86	02/21/86F
20.	I & C	03/07/86	03/07/86F
21.	GENERAL APPENDICES		
	A. ORGANIZATION	05/17/85	07/12/85F
	B. DESIGN CONTROL	05/17/85	07/12/85F
	C. PROCUREMENT	07/12/85	08/09/85F
	D. DOCUMENT CONTROL	07/12/85	07/19/85F
	E. MATERIAL CONTROL	07/12/85	08/02/85F
	F. INSPECTOR QUALIFICATION/CERTIFICATION	06/21/85	07/19/85F
	G. MEASURING AND TEST EQUIPMENT	06/21/85	07/19/85F
	H. NONCONFORMANCES	06/21/85	07/19/85F
	I. PROJECT QUALITY ASSURANCE ORGANIZATION	06/21/85	05/24/85A
	J. EQUIPMENT QUALIFICATION	TBD	TBD
	K. CONSTRUCTION COMPLETION	07/12/85	OPEN

IDR SCHEDULE

JUNE 25, 1985

ACTIVITY	DATE
INITIAL TEAM MEETING	5/31
START CHECKLIST	6/10
SITE FAMILIARIZATION	6/24 AND 6/25
COMPLETE CHECKLIST	6/28
ENGINEERING REVIEW	7/15 TO 8/2
PREPARE FINDINGS/REPORT	8/5 TO 8/9
SITE REVIEWS	8/12 TO 8/26
ISSUE LAST FINDINGS	9/9
LAST PROJECT RESPONSE	9/23
LAST RESPONSE RESOLUTION	10/7
SWEC MANAGEMENT REVIEW	10/9
ISSUE REPORT TO GPC	10/15

STATUS READINESS REVIEW PROGRAM

- **SUBMITTED TO NRC**
 - **THREE MODULES**
 - **ONE APPENDIX**
- **FORECAST JULY SUBMITTALS**
 - **THREE MODULES**
 - **TWO APPENDICES**
 - **PROGRAM DESCRIPTION**
- **IDR PLAN AND CHECKLIST REVIEWED
AND ACCEPTED BY NRC**

RESULTS READINESS REVIEW PROGRAM

- **MISSING/MISFILED DOCUMENTATION**
- **INADEQUATE PROCEDURES**
- **FAILURE TO FOLLOW PROCEDURES**
- **CALCULATIONAL CONCERNS**

PRINCIPLE DESIGN FEATURES

ACRS SUBCOMMITTEE MEETING

JULY 18-19, 1985

GEORGE BOCKHOLD

GENERAL MANAGER - VOGTLE NUCLEAR OPERATIONS DEPT.

GEORGIA POWER COMPANY

PRINCIPLE DESIGN FEATURES

NSSS

Reactor	Westinghouse PWR
Thermal Power (MW_t)	3411
Pump Heat (MW_t)	14
Total Thermal Power (MW_t)	3425
Number of Coolant Loops	4
Reactor Coolant Pumps	
Horsepower	7000
Design Flow (GPM)	100,600
Design Pressure (PSIG)	2485
Design Temperature ($^{\circ}F$)	650
Steam Generators	
Type	Model F, Shell and U-Tube
Heat Transfer Area (ft^2)	55,000
Number of U-Tubes	5626
Pressurizer	
Design Pressure (PSIG)	2485
Design Temperature ($^{\circ}F$)	680
Internal Volume (ft^3)	1800
Total RCS Flow (10^6 lb/h)	142.1
Total RCS Volume, including Pressurizer and Surge Line (ft^3)	12,462

REACTOR CORE

Fuel Assembly Array	17 X 17
Number of Fuel Assemblies	193
Number of Full-Length Rods	53
Absorber Material	HAFNIUM
Fuel Enrichment (WT%)	
Region 1	2.10
Region 2	2.60
Region 3	3.10
Number of Core Exit Thermocouples	50
Number of Movable Incore Detectors Path	58

TURBINE - GENERATOR

Manufacturer	General Electric
Turbine	
High Pressure	1
Low Pressure	3
Operating Speed (RPM)	1800
Generator	
Generator Rated Output (kW)	1,156,622
Voltage (V)	25,000

ENGINEERED SAFETY FEATURES

Emergency Core Cooling

Accumulators

Number	4
Operating Pressure, Minimum (PSIG)	600
Minimum Operating Water Volume, each (ft ³)	950

Centrifugal Charging Pumps

Number	2
Design Flow (GPM)	150
Design Head (ft)	5800

Safety Injection Pumps

Number	2
Design Flow (GPM)	425
Design Head (ft)	2680

Residual Heat Removal Pumps

Number	2
Design Flow (GPM)	3700
Design Head (ft)	375

Nuclear Service Cooling Water System

Pump Data

NSCW Pumps

Number	6
Type	Vertical, Centrifugal
Rated Capacity, each (GPM)	8600
Rated Total Differential Head (ft)	230

Transfer Pumps

Number	2 (100% each)
Type	Vertical, Centrifugal
Rated Capacity, each (GPM)	600
Rated Total Differential Head (ft)	110

Tower Data

Number	2 per unit
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Fan Data

Quantity (Per Tower)	4
Speed (RPM)	164
Airflow (CFM/Fan)	535,000
Wet Bulb Temperature (°F)	82
Drift Loss (percent)	0.01

Component Cooling Water Pumps

Number	6 (50 percent each)
Type	Horizontal Centrifugal
Capacity (GPM, each)	5000
Total Differential Head (ft)	160

Auxiliary Feedwater Pumps

Motor - Driven

Number	2
Type	Horizontal Centrifugal
Capacity (GPM, each)	630
Total Differential Head (ft)	3500

Turbine - Driven

Number	1
Type	Horizontal Centrifugal
Capacity (GPM)	1175
Total Differential Head (ft)	3500

Containment Spray Pumps

Number	2
Type	Horizontal Centrifugal
Design Flowrate (GPM)	2600
Design head (ft)	450

Natural Draft Cooling Tower

Quantity	1 per unit
Approximate Height (ft)	540
Design Wet Bulb Temperature	78
Design Relative Humidity (%)	51
Design Inlet Temperature (°F)	122
Design Outlet Temperature (°F)	89
Design Flowrate (GPM)	509,600

Containment

Type	Steel-lined, Prestressed, Post-tensioned, Concrete Cylinder, Hemispherical Dome Roof
Design Pressure (PSIG)	52
Nominal Free Volume (ft ³)	2,750,000
Concrete Thickness (ft)	
Vertical Wall	3 3/4
Dome	3 3/4

PLANT STATUS AND STARTUP SCHEDULE

ACRS SUBCOMMITTEE MEETING

JULY 18-19, 1985

GEORGE BOCKHOLD

GENERAL MANAGER - VOGTLE NUCLEAR OPERATIONS DEPT.

GEORGIA POWER COMPANY

MILESTONE SCHEDULE

COMPLETED MILESTONES

<u>MILESTONE</u>	<u>SCHEDULED</u>	<u>COMPLETED</u>
ENERGIZATION	MAR 1985	FEB 1985
RV AVAIL FOR FLUSH	MAY 1985	MAY 1985

SCHEDULED MILESTONES

<u>MILESTONE</u>	<u>SCHEDULED</u>
SECONDARY HYDRO	NOV 1985
TURBINE ON TURNING GEAR	DEC 1985
PRIMARY HYDRO	DEC 1985
INITIAL CONDENSER VACUUM	DEC 1985
HOT FUNCTIONAL	JAN 1986
ILRT	MAR 1986
FUEL LOAD	SEP 1986
COMMERCIAL OPERATION	MAR 1987

VOGTLE ELECTRIC GENERATING PLANT
PROJECT PERCENT COMPLETE
84-0 CONSTRUCTION SCHEDULE
PERIOD ENDING 06/23/85

CONSTRUCTION COMPLETION

ACTUAL

UNIT 1 & COMMON APPROXIMATELY

82%

UNIT 2 & COMMON APPROXIMATELY

47%

BULK QUANTITY INSTALLATION

<u>COMMODITY</u>		<u>TOTAL ESTIMATE</u>	<u>INSTALLED TO DATE</u>	<u>% COMPLETE</u>
<u>UNIT 1</u>				
CONCRETE	(CY)	524,797	514,959	98
BACKFILL	(CY)	3,850,000	3,767,506	98
LARGE PIPE	(LF)	345,126	332,842	96
LARGE HANGERS	(EA)	20,547	15,999	78
SMALL PIPE	(LF)	306,906	255,621	83
SMALL HANGERS	(EA)	35,842	20,486	57
HVAC DUCT	(LB)	4,159,345	3,246,914	78
CABLE TRAY	(LF)	155,508	143,081	92
CONDUIT	(LF)	1,254,015	840,894	67
WIRE & CABLE	(LF)	9,681,879	5,464,643	56
TERMINATIONS	(EA)	303,042	104,616	35
PULLMAN INSTRUMENTS	(EA)	3,315	1,608	49
CLEVELAND INSTRUMENTS	(EA)	1,563	984	63
COATINGS	(SF)	3,176,998	2,235,212	70

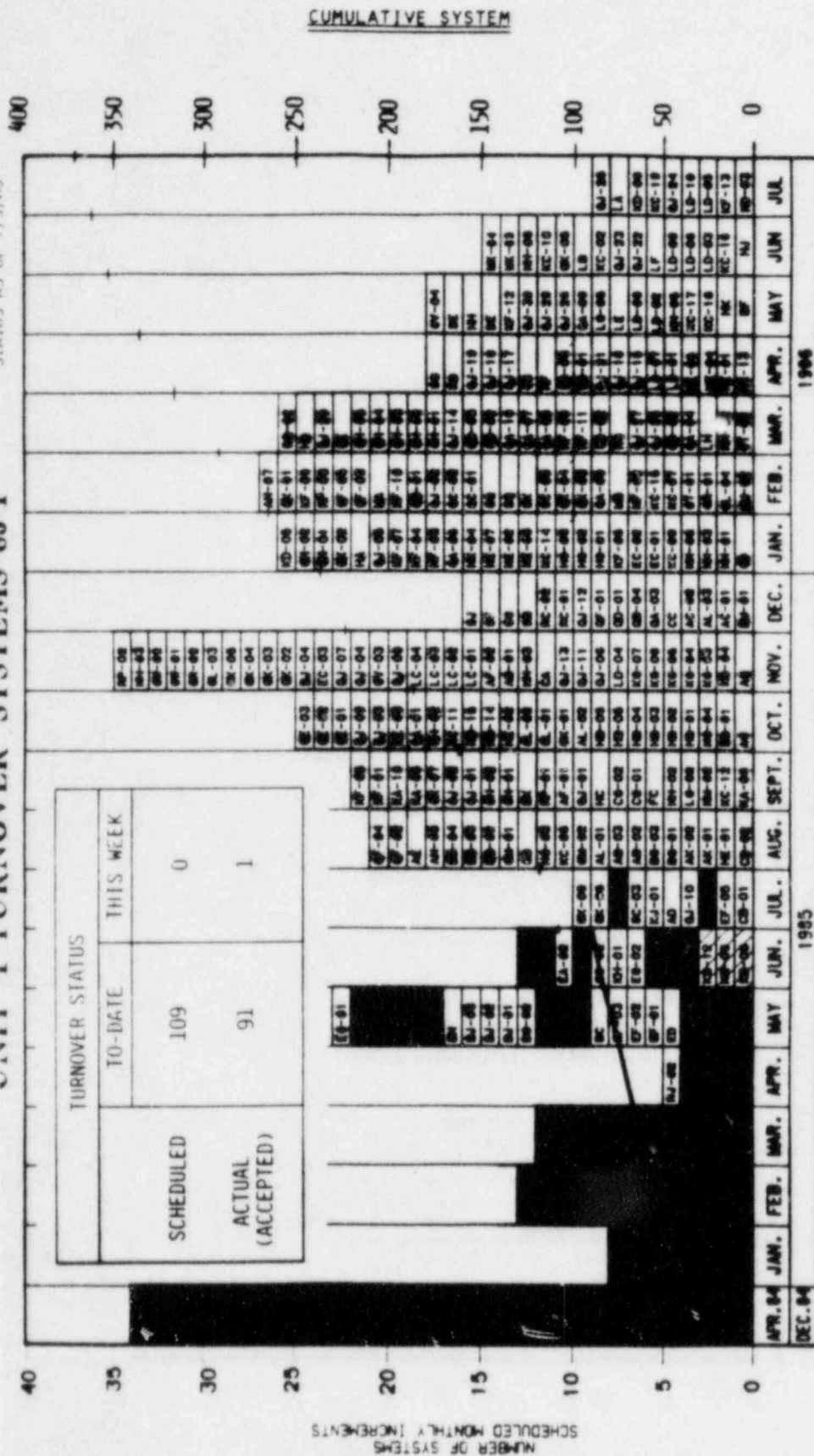
EQUIPMENT TURNED OVER TO STARTUP - 16%

BULK QUANTITY INSTALLATION

<u>COMMODITY</u>		<u>TOTAL ESTIMATE</u>	<u>INSTALLED TO DATE</u>	<u>% COMPLETED</u>
<u>UNIT 2</u>				
CONCRETE	(CY)	126,877	95,238	75
LARGE PIPE	(LF)	192,695	72,656	38
LARGE HANGERS	(EA)	13,639	637	5
SMALL PIPE	(LF)	191,979	11,720	6
SMALL HANGERS	(EA)	21,112	517	2
HVAC DUCT	(LB)	2,053,926	201,109	10
CABLE TRAY	(LF)	128,008	5,453	4
CONDUIT	(LF)	494,667	66,030	13
WIRE & CABLE	(LF)	6,774,872	-	-
TERMINATIONS	(EA)	211,500	-	-
COATINGS	(SF)	390,385	16,094	4

VOGTLE ELECTRIC GENERATING PLANT UNIT 1 TURNOVER SYSTEMS 85-1

STATUS AS OF 7/5/85



NOTE: SYSTEM 7/5/85 FROM TO 8/1/86 AND REPORTED AS ACTUAL.

ACTUAL

PRESERVICE INSPECTION AND TESTING

ACRS Subcommittee Meeting

July 18 & 19, 1985

T. N. Epps
Manager-Inspection, Testing & Engineering
Southern Company Services, Inc.

PRESERVICE INSPECTION PROGRAM

I. Examination of Reactor Coolant Piping

- ° Reactor coolant piping on Vogtle-1 is centrifugally cast stainless steel with statically cast stainless steel fittings.
- ° Calibration block from Vogtle-1 piping material.
- ° Used pitch/catch transducers that would yield effective results.
- ° Ultrasonic procedure written for this testing purpose.
- ° Demonstrated technique to NRC personnel.
- ° Conducted ultrasonic examination of 100% of circumferential and branch connection S. S. welds in the Vogtle-1 RCS.
- ° Examinations demonstrated to NRC inspector and compared favorably with his verification examinations. (See NRC I&E report no. 50-424/85-25 and 50-425/85-24, page 6).

II. Reactor Pressure Vessel

A contract has been awarded for the PSI reactor vessel examination. Reg. Guide 1.150 to be met.

III. Preservice Inspection Relief Requests

Only minor relief requests have been identified to date. The necessary relief requests will be submitted to NRC after the Vogtle-1 PSI.

INSERVICE TESTING OF PUMPS AND VALVES

- ° The Vogtle - 1 Preservice Inspection and Testing programs have been established to meet the 1980 ASME Section XI Code, thru Winter 1980 addenda.
- ° The Inservice Inspection and Testing program will be established in accordance with the edition of ASME Section XI in effect 12 months prior to the operating license.
- ° The pump test program will list all safety-related Class 1, 2, and 3 pumps that are provided with an emergency power source and are necessary to safely shut down the plant or mitigate the consequences of an accident.
- ° The valve test program will list all safety-related (i.e., those valves necessary to safely shut down the plant or mitigate the consequences of an accident) Class 1, 2, and 3 valves required to be operationally tested.
- ° Preoperational tests will be performed to determined margins that will envelope the safety analysis. The ASME Section XI preservice testing program will establish the baseline for pumps and valves for later comparison with inservice testing results, to verify that these components meet operability requirements.

QUALITY ASSURANCE

ACRS SUBCOMMITTEE MEETING

JULY 18-19, 1985

PAUL D. RICE

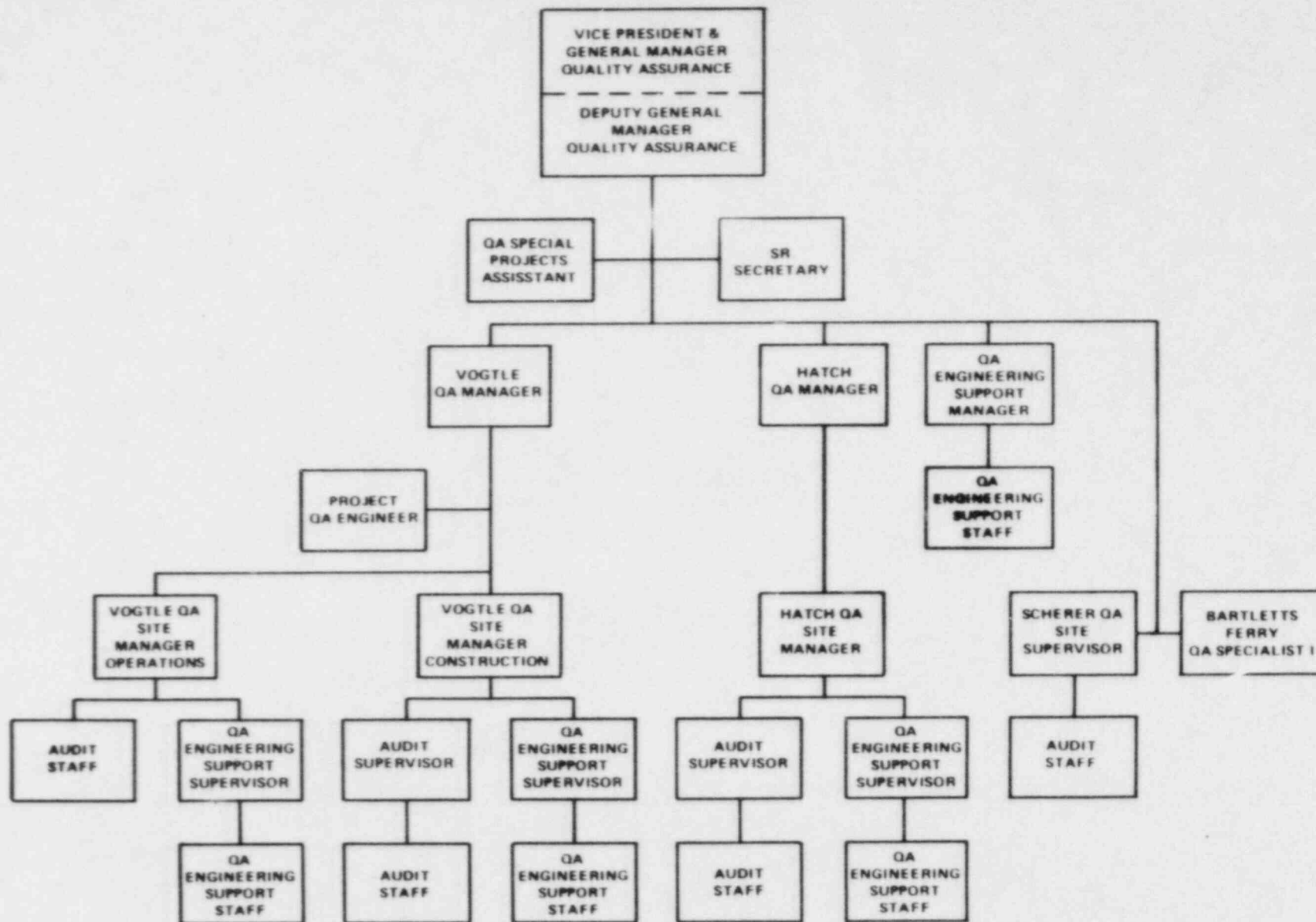
VICE PRESIDENT, QUALITY ASSURANCE

GEORGIA POWER COMPANY

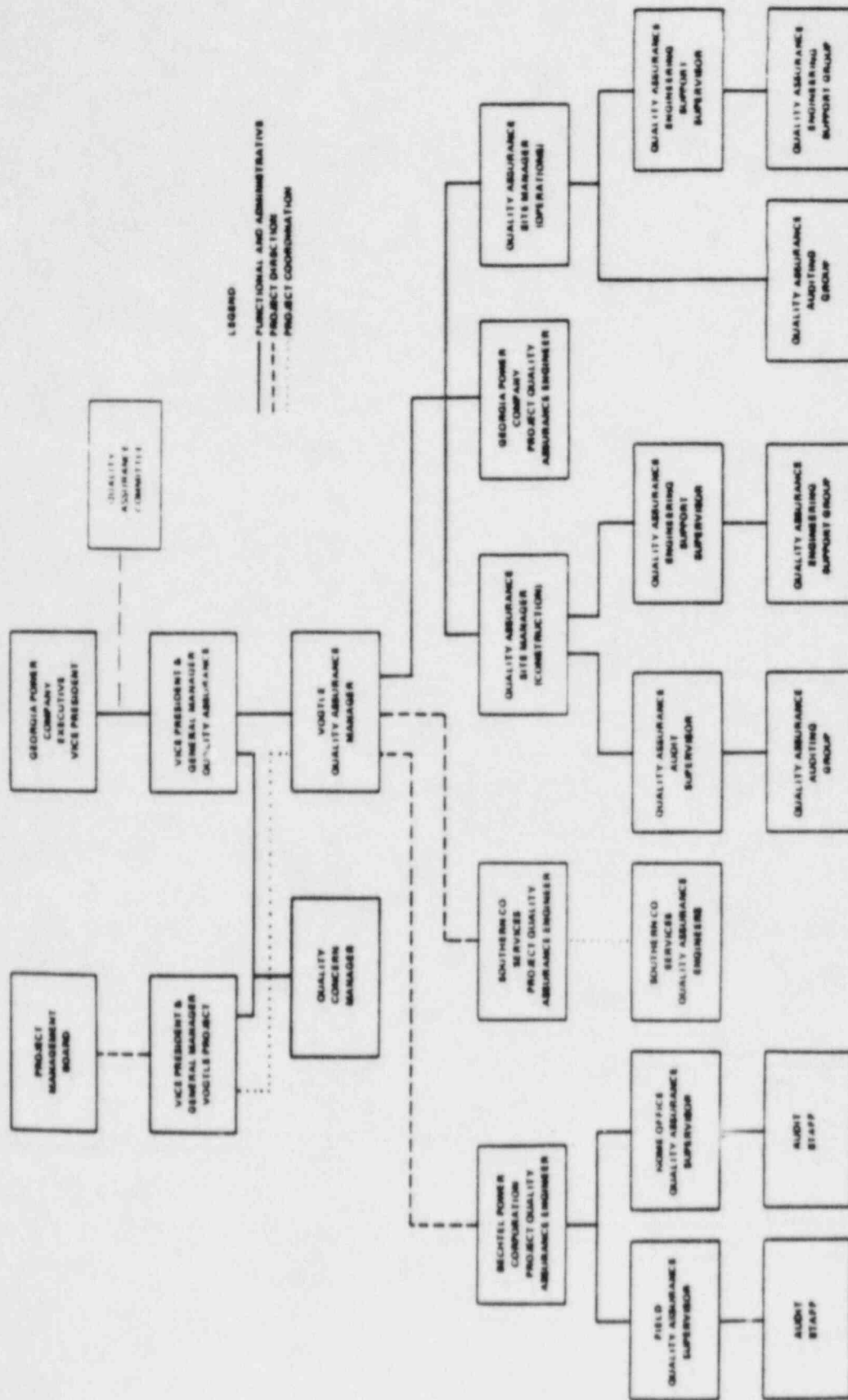
KEY QUALITY ASSURANCE FEATURES

- **Organization**
- **Nuclear Quality Assurance Experience**
- **Training And Qualification**
- **Prevention Oriented Practices**
- **Audits/Assessments/Surveillances**
- **Management Involvement**

**GEORGIA POWER COMPANY
QUALITY ASSURANCE DEPARTMENT
ORGANIZATION**



VOGTLE QA ORGANIZATION



QUALITY ASSURANCE PERSONNEL EXPERIENCE

**QA Management Top Seven Managers Have Over 120 Years
Nuclear Experience**

Vogtle QA Staff 23 Technical - 60% With 4 Year Degree

**Vogtle QA Manager Over 15 Years Vogtle And Hatch Nuclear
QA Experience**

**Vogtle QA Site Manager . . . Over 11 Years Vogtle And Hatch Nuclear
(Construction) QA Experience**

**Vogtle QA Site Manager . . . Over 15 Years Vogtle And Hatch Nuclear
(Operations) QA Experience (10 Years Operations QA)**

**Vogtle QA Staff Over 140 Years Vogtle And Hatch Nuclear
Experience QA/QC Experience**

TRAINING PROGRAM

- **Formal 5 Phase Program**
- **6-9 Months On The Job Training**
- **Written Examinations**
- **Oral Board Examinations**
- **Special Training**

PREVENTION ORIENTED QUALITY ASSURANCE

- **Procedures Development**
- **Contractor Programs**
- **Operations Programs**
- **Lessons Learned**

AUDITS / ASSESSMENTS / SURVEILLANCES

- **Audits**
 - **Design**
 - **Construction**
 - **Operations**
- **Assessments**
 - **Program**
 - **Special**
- **Surveillances**
 - **Work Activity Oriented**
 - **Initial Test Program**

MANAGEMENT INVOLVEMENT

- **Project**
- **Quality Assurance**
- **Corporate**