

Official Transcript of Proceedings  
NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards  
AP1000 Subcommittee

Docket Number: (n/a)

Location: Rockville, Maryland

Date: Tuesday, January 11, 2011

Work Order No.: NRC-646

Pages 1-104

**NEAL R. GROSS AND CO., INC.**  
**Court Reporters and Transcribers**  
**1323 Rhode Island Avenue, N.W.**  
**Washington, D.C. 20005**  
**(202) 234-4433**

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23

DISCLAIMER

UNITED STATES NUCLEAR REGULATORY COMMISSION'S  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards, as reported herein, is a record of the discussions recorded at the meeting.

This transcript has not been reviewed, corrected, and edited, and it may contain inaccuracies.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

+ + + + +

AP1000 SUBCOMMITTEE

V.C. SUMMER UNITS 2 AND 3 COMBINED LICENSE

APPLICATION

+ + + + +

TUESDAY, JANUARY 11, 2011

+ + + + +

The Advisory Committee met at the Nuclear  
Regulatory Commission, Two White Flint North, Room  
T2B1, 11545 Rockville Pike, at 8:30 a.m., Harold B.  
Ray, Chairman, presiding.

SUBCOMMITTEE MEMBERS:

HAROLD B. RAY, Chairman

J. SAM ARMIJO, Member

SANJOY BANERJEE, Member

DENNIS C. BLEY, Member

CHARLES H. BROWN, Member

JOY REMPE, Member

MICHAEL T. RYAN, Member

JOHN D. SIEBER, Member

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

CONSULTANT:

WILLIAM HINZE

DESIGNATED FEDERAL OFFICIAL:

WEIDONG WANG

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

T-A-B-L-E O-F C-O-N-T-E-N-T-S

Opening Remarks and Objectives.....4

Applicant - Chapters 11, and 12.....5

Staff - Chapters 11, and 12.....18

Applicant - Chapters 15, 16, and 17.....24

Staff - Chapters 15, 16 and 17.....34

Committee Discussion.....39

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1

2

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

P-R-O-C-E-E-D-I-N-G-S

8:31 a.m.

CHAIRMAN RAY: The meeting will now come to order. This is the second day of a meeting of the AP1000 Reactor Subcommittee, a standing subcommittee of the Advisory Committee on Reactor Safeguards.

I'm Harold Ray, chairman of the Subcommittee. ACRS members in attendance are Jack Sieber, Joy Rempe, Charles Brown, Michael Ryan, Dennis Bley, Sam Armijo and Sanjoy Banerjee. We will be joined also by ACRS consultant Mr. Bill Hinze.

Weidong Wang is the designated federal official for this meeting. And I will forego reciting the purpose of the meeting which is in the record from yesterday.

An agenda for today's session has been updated and distributed. And as usual, we will ask that since a transcript is being made available, and will be made available as stated in the Federal Register Notice, we request the participants in the meeting use the microphones located throughout the meeting room. When addressing the Subcommittee, identify themselves and speak with sufficient clarity and volume so that they may be readily heard.

The schedule for the meeting, which has

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 been expanded slightly to include opportunity for the  
2 subcommittee to discuss a few items with the Vogtle  
3 applicant after we have completed discussion of the  
4 Summer application, is, nevertheless, expected to be  
5 concluded by lunchtime.

6 And this morning for Summer, we will go  
7 through two tranches of SER chapters, starting with  
8 11, 12 and 13. As usual, I'll turn to the staff and  
9 see if they have any comments they want to make.

10 MR. AKSTULEWICZ: No, Mr. Chairman. Thank  
11 you.

12 CHAIRMAN RAY: Thank you, Frank.

13 So, with that, we will then begin with the  
14 Applicant and Chapters 11, 12 and 13.

15 MS. MONROE: Thank you, Mr. Chairman.

16 We'll talk about Chapters 11, 12 and 13.  
17 And 13 is without emergency planning since we  
18 discussed that yesterday.

19 In Chapter 11, again we incorporated the  
20 DCD by reference and we incorporated all of the  
21 standard material.

22 The site-specific information of interest  
23 that I wanted to talk briefly about is the liquid  
24 radwaste system and the waste water system, gaseous  
25 waste management and effluent monitoring.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           Our liquid radwaste connects to the waste  
2 water system within the Exclusion Area Boundary for  
3 dilution to ensure that we meet the release limits.

4           The liquid waste typing is in stainless  
5 steel and is enclosed in the guard pipe. And we  
6 monitor it for leakage in accordance with 10 CFR  
7 20.1402.

8           The dilution is primarily from the  
9 circulating water system blowdown line. The waste  
10 water to the plant outfall is buried in HDPE pipe, I  
11 think we discussed this briefly yesterday, and the  
12 groundwater monitoring program that's contained in  
13 Appendix 12 AA in our FSAR referencing NEI 08-08, will  
14 evaluate the line for monitoring for leakage.

15           LADTAP II was utilized to determine the  
16 estimated doses and dose rates for liquid releases  
17 through the plant. The LADTAP II computer model is  
18 based on the methodology in Reg Guide 1.109.

19           The dilution factors used for the maximum  
20 exposed individual and population doses that are  
21 calculated by LADTAP, is in accordance with Reg Guide  
22 1.113.

23           In calculating the effluent doses, the  
24 blowdown rate of 6000 GPM was conservatively  
25 neglected. So, we assumed that there was no dilution

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 of the waste water prior to entering the Broad River  
2 Parr Reservoir.

3 The effluent discharge is assumed to be,  
4 again, directly diluted by the Broad River. The  
5 retention time in the Parr Reservoir is considered to  
6 be four days. The activity pathways that were  
7 considered ultimately were drinking water, sport  
8 fishing, irrigated farm products and then other  
9 recreational activities.

10 That analysis concluded that the total  
11 site doses to individuals due to liquid and gaseous  
12 effluents are well within the limits of 10 CFR 50  
13 Appendix I.

14 In addition, a cost benefit analysis was  
15 performed to satisfy the requirements of 10 CFR 50  
16 Appendix I, II D, the methodology of Reg Guide 1.110  
17 was applied, and the result was that there were no  
18 augments to the liquid radwaste system shown to be  
19 cost beneficial.

20 MEMBER RYAN: Just a quick question on that  
21 HDPE pipe. I didn't hear what you said after you  
22 mentioned HDPE pipe.

23 Is that going to be monitored? Is it a  
24 double-pipe system or how is that going to work?

25 MS. MONROE: It is not a double-pipe

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 system. Our monitoring program contained in Appendix  
2 12 AA utilizing groundwater monitoring programs, it  
3 could be groundwater wells. The program hasn't been  
4 fully developed yet, but it is not a double-lined  
5 pipe.

6 MEMBER RYAN: Okay. How are you going to  
7 detect leaks other than with contamination at some  
8 distance from the pipe?

9 MR. SCHMIDT: This is Tim Schmidt, SCE&G.  
10 As far as monitoring for leakage -

11 MEMBER RYAN: Yes.

12 MR. SCHMIDT: - under NEI 08-08, I mean,  
13 one of the provisions is groundwater wells, using  
14 those for monitoring.

15 MEMBER RYAN: I guess, you know, with the  
16 recent experience, that tells you the cat's out of the  
17 bag at that point.

18 MR. SCHMIDT: Right. Just a few points on  
19 the blowdown line. One of the things we try to  
20 incorporate from OE out there in industry, is that  
21 there's no valves or vacuum breakers along that line  
22 from the point where the liquid radwaste enters it to  
23 the plant outfall and Parr.

24 And in addition, you know, it's gravity  
25 flow, open channel flow. So, there shouldn't be a lot

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 of pressure. Those fused welds in HDPE piping  
2 undergo, you know, visual examinations during  
3 fabrication as well as, you know, the line would be  
4 hydrotested or a unit sent through it to pressure test  
5 each weld.

6 So, we did have a lot of confidence in the  
7 construction of the lines.

8 MEMBER RAY: Well, that's interesting you  
9 don't have any breakers or other potential sources -

10 MR. SCHMIDT: Right. And we do state that  
11 in our SR.

12 MEMBER RAY: Is there any thought of  
13 periodic hydrostatic testing for service life or -

14 MR. SCHMIDT: No, not at this point. You  
15 know, the NEI 08-08 provisions for monitoring for  
16 leakage, you know, groundwater monitoring obviously is  
17 one of them, but it does talk about periodic tests and  
18 inspections. That certainly could be one mechanism of  
19 satisfying that.

20 MEMBER RAY: Okay. Thanks.

21 MS. MONROE: GASPARI II was utilized to  
22 estimate the doses and dose rates from normal gaseous  
23 releases from the plant and GASPARI II computer codes  
24 based on the methodology in Reg Guide 1.109.

25 Activity releases considered are plume,

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 ground deposition, inhalation and the ingestion of  
2 vegetables, meat and milk, both cow and goat milk. As  
3 noted, the doses are well within the regulatory  
4 limits.

5 As with the liquid radwaste system, again  
6 a cost benefit analysis was performed on the gaseous  
7 waste management system to satisfy the requirements of  
8 10 CFR 50 Appendix I, II D. And the methodology of  
9 Reg Guide 1.110 was applied, and the results were that  
10 no augments to the system were shown to be cost  
11 beneficial.

12 SCE&G will be extending the Unit 1 quality  
13 assurance and radiological effluent environmental  
14 monitoring program based on Reg Guide 4.15 Rev 1 to be  
15 utilized for Units 2 and 3 also.

16 In Chapter 12, again we incorporated the  
17 DCD by reference and all standard material. The  
18 chapter touches on the TSC and OSC relocation  
19 departure simply because some figures are contained in  
20 that chapter.

21 We also identified in this section, the  
22 site-specific evaluations for doses to construction  
23 workers.

24 Direct radiation from Unit 1 is considered  
25 negligible based on TLD measurements for doses to

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 construction workers. Exposures are considered  
2 minimal for gaseous and liquid doses.

3 Since a portion of the Unit 3 construction  
4 will overlap the operation of Unit 2, the worst case  
5 assumed for a construction worker would be on a Unit 3  
6 construction worker based on the effluents from Units  
7 1 and 2.

8 Considering the direct radiation, as well  
9 as the contribution from liquid and gaseous effluents,  
10 the dose was evaluated to be 1.3 millirem TED. So,  
11 very minor.

12 10 CFR 20.1301 limits the annual dose from  
13 the licensed operators to individuals of the public to  
14 a hundred millirem TED. So, these construction  
15 workers are considered members of the public. But  
16 based on the minimal exposure there, no specific  
17 radiation monitoring will be required.

18 In Chapter 13, we incorporated the DCD by  
19 reference. Again, there's a great deal of standard  
20 material and programmatic issues addressed in that  
21 chapter.

22 The most notable site-specific issue would  
23 be where we're a little different, would be  
24 organizational structure. And that's simply because  
25 we are - being a small utility and all of our nuclear

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 will be located at one site, we have almost all of our  
2 nuclear organization located at the site. So, there's  
3 a lot more direct management interaction with the site  
4 directly on a day-to-day basis.

5 Are there any questions on Chapters 11, 12  
6 or 13?

7 CHAIRMAN RAY: Okay. Hearing none, thank  
8 you.

9 MEMBER RYAN: Just one follow-up. I guess  
10 I'm still kind of stuck on why you wouldn't think of a  
11 double-walled or some kind of monitored pipe for the  
12 outfall.

13 I mean, groundwater monitoring wells, I  
14 guess, to me, aren't as satisfying as a more direct  
15 measure of -

16 MR. SCHMIDT: This is Tim Schmidt, SCE&G  
17 again. The Regulatory Guidance and 4.21 that we  
18 looked at looking at the liquid radwaste system  
19 interface with the waste water systems and blowdown  
20 line, we did, you know, it speaks to, you know,  
21 radwaste lines being double-walled and monitored.

22 So, certainly the liquid radwaste not  
23 being diluted in the yard, we certainly saw as far as  
24 risk not needing to double wall that.

25 Once it's entered into the circulating

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 water blowdown pipe and it be in, you know, open  
2 channel flow again in a gravity flow heavy-wall HDPE,  
3 we just did not see the need for a double-walled  
4 piping system to the plant outfall.

5 MEMBER RYAN: I guess what would your  
6 expectations be for the radiological concentrations in  
7 the pipe?

8 MR. SCHMIDT: In the pipe?

9 MEMBER RYAN: Yes. I mean, what would you  
10 expect as typical levels of tritium or something?

11 MR. SCHMIDT: I can't speak to specific  
12 levels. I mean, as far as the design criteria, the  
13 systems being designed to - it's at the point when the  
14 liquid radwaste enters into the blowdown line, it's  
15 supposed to meet the Part 20 at that point.

16 MEMBER RYAN: I'll have to think about that  
17 a little bit. Thanks.

18 MEMBER ARMIJO: There is an expectation  
19 that this material has a lot of advantages over the  
20 conventional metal piping not subject to the same kind  
21 of corrosion problems that we've had with steel or  
22 cast iron, things like that.

23 But this material could be subject to  
24 fabrication defects that aren't necessarily detectable  
25 with a hydrotest that will - a pinhole-type defect in

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 a weld and - which may not show up in the initial  
2 hydrotest. But with time and aging and things like  
3 that, could lead to very small leaks. I would not  
4 expect anything very large.

5 And just it - to Mike's concern, over time  
6 a small pinhole wouldn't be detectable until you've  
7 contaminated the ground. And it would cause you a lot  
8 of headaches to find out later that that thing was  
9 leaking.

10 And your groundwater monitoring well is  
11 probably really deep compared to where the pipe is.  
12 And I'm just wondering if there's some - you've given  
13 some consideration for at least in the early stages to  
14 monitor locally it at joints. Either - or these  
15 fusions made or if there happens to be any high-  
16 density poly - whatever. You know what I'm talking  
17 about.

18 Are there joints between that and metal  
19 pipes that are under ground, or are they all above  
20 ground?

21 MR. SCHMIDT: Yes, this is Tim Schmidt  
22 again. The interface of the liquid radwaste line,  
23 which is a stainless steel line within a guard pipe,  
24 the dilution point and how that's designed, you know,  
25 isn't clear at this point, but there will obviously be

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 interface between an HDPE material and the stainless  
2 steel.

3 MEMBER ARMIJO: Will that be underground  
4 and -

5 MR. SCHMIDT: That would be underground  
6 likely in a manhole that's monitored.

7 MEMBER ARMIJO: Okay. So, you've thought  
8 of -

9 MR. SCHMIDT: Yes, sir.

10 MEMBER ARMIJO: - that as a potential weak  
11 point or risk point.

12 MR. SCHMIDT: Right.

13 MEMBER RYAN: Is the HDPE pipe going to be  
14 in the saturated zone or the unsaturated zone?

15 MR. SCHMIDT: That would be both. That, I  
16 cannot speak to. I'm not sure of that.

17 MEMBER RYAN: My guess is the saturated  
18 zone in that part of South Carolina isn't much  
19 different than I'm used to in Barnwell County. So,  
20 I'm guessing it's not ten feet down. It's a few feet  
21 down. Maybe six or eight.

22 And if it's in the saturated zone, your  
23 opportunity to detect leakage goes away because it's  
24 going to, you know, things are going to disperse in  
25 the saturated zone very quickly to the point where -

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 and I think Sam put it, you know, it can be a headache  
2 down the line if you detect it later on. So, I'm just  
3 curious how all that fits together.

4 MR. SCHMIDT: The specific zones you're  
5 speaking of, you know, I can't speak to.

6 MEMBER RYAN: And I'm not asking you to try  
7 and guess it today, but that's something to think  
8 about.

9 MR. SCHMIDT: Right.

10 MEMBER RYAN: If it's in the unsaturated  
11 zone, you get a little different opportunity for  
12 detection that's not as time sensitive as if it's in  
13 the saturated zone.

14 MR. SCHMIDT: Sure. Again with the HDPE  
15 pipe fusing welds, I've seen - I've witnessed the  
16 process. It is a very rigorous process.

17 MEMBER ARMIJO: I agree. It's a very -

18 MR. SCHMIDT: The constructors go through a  
19 qualification program and are trained. And, again,  
20 the welds are visually inspected as well.

21 MEMBER RYAN: The expected lifetime of this  
22 pipe is decades?

23 MR. SCHMIDT: I mean, sixty years is the  
24 timeline.

25 MEMBER RYAN: So, I don't guess we've got

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 any testing data that takes us out that far on the  
2 weld.

3 MR. SCHMIDT: I'm not prepared to -

4 MEMBER RYAN: So, I don't disagree with  
5 you.

6 MR. SCHMIDT: Right.

7 MEMBER RYAN: But by the same token, the  
8 expectation is pretty high that it's going to last a  
9 long time.

10 MR. SCHMIDT: Sure.

11 MEMBER RYAN: So, it's something to think  
12 about.

13 MR. SCHMIDT: Right. And, you know, we  
14 have spoken with plants in industry. In the one  
15 plant, I know they replaced six miles of their old  
16 techite line with high-density poly and are pretty  
17 well satisfied with it.

18 They have groundwater monitoring wells  
19 that were, you know, for the old piping.

20 MEMBER RYAN: Okay. Thank you.

21 MS. MONROE: We understand your concerns  
22 and we'll look at that as we're finalizing design of  
23 the system.

24 MEMBER RYAN: Okay. Thank you.

25 (Off-record comments.)

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MR. HABIB: Staff review?

2 CHAIRMAN RAY: Please.

3 MR. HABIB: My name is Don Habib. I was  
4 project manager for Chapters 11 and 12 for the Summer  
5 COL. With me is Denise McGovern. She is project  
6 manager for Chapter 13.

7 And for Chapter 11, what we have on the  
8 slide is an overview of the site-specific evaluations  
9 that the staff performed. There were also standard  
10 reviews for just the site-specific portion that we've  
11 enumerated on the slide.

12 In going over that material, we didn't  
13 identify anything that was noteworthy to specifically  
14 write a presentation for. So, I just wanted to give  
15 you an overview of these items.

16 If you have specific questions on any of  
17 them, we did bring tech staff here this morning to  
18 answer questions.

19 For liquid waste management review -  
20 liquid radioactive waste management for that review,  
21 the cost benefit analysis with the site-specific  
22 review had site-specific population data.

23 For the release from tank, liquid waste  
24 tank failure, that also included site-specific  
25 information on the pathways.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 For the compliance with 10 CFR Part 50,  
2 Appendix I, which was for the maximum-exposed  
3 individual and population doses, again that was site-  
4 specific information. And the liquid waste discharge  
5 pipe, which we just discussed.

6 For gaseous waste management, there was  
7 site-specific information in the cost benefit  
8 analysis, and also in the evaluation of discharges to  
9 meet Appendix I - Part 50 Appendix I limits.

10 And then the 11.5 radiation monitoring,  
11 site-specific information for the quality assurance  
12 program and also for, again, compliance with Part 50  
13 Appendix I.

14 For Chapter 12, radiation protection,  
15 there's site-specific information in the departure  
16 dealing with the relocation of the operation support  
17 center. The liquid waste discharge pipe evaluation  
18 appeared here as well. And also the evaluation of  
19 construction worker doses was site-specific.

20 MS. MCGOVERN: Good morning.

21 CHAIRMAN RAY: Good morning.

22 MS. MCGOVERN: I'm Denise McGovern.  
23 Chapter 13 project manager. This is an overview of  
24 the site-specific information that was evaluated in  
25 Chapter 13.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1           There are several - Amy spoke to several  
2 Summer COL additions that had to deal with their  
3 organizational structure. There's also some in here  
4 that are pointers to where things were evaluated such  
5 as fire protection.

6           There were no site-specific information  
7 for 13.2, which was training, and 13.4, which is  
8 operational programs. Emergency planning was  
9 presented to you yesterday.

10           There were two site-specific plant  
11 procedures in 13.5. 13.7, fitness for duty, had no  
12 site-specific information of any significance. And  
13 13.8, cybersecurity.

14           Go ahead.

15           MEMBER ARMIJO: I have a question on where  
16 you say none -

17           MS. McGOVERN: I'm sorry.

18           MEMBER ARMIJO: On the issue of, for  
19 example, training -

20           MS. McGOVERN: Yes.

21           MEMBER ARMIJO: - it's incorporated by  
22 reference from the Vogtle COL? I don't understand how  
23 -

24           MS. McGOVERN: Vogtle is actually - was  
25 standard information from Bellefonte. So, earlier -

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 do you remember when that was done? July or August.

2 MEMBER ARMIJO: Okay. So, initially the  
3 training issues were resolved -

4 MS. McGOVERN: Correct.

5 MEMBER ARMIJO: - with Bellefonte. Vogtle  
6 incorporated that by reference.

7 MS. McGOVERN: Correct.

8 MEMBER ARMIJO: And Summer is going to  
9 incorporate - now, does that mean the training  
10 programs are identical -

11 MS. McGOVERN: No, it means -

12 MEMBER ARMIJO: - or is that an over -

13 MS. McGOVERN: It means -

14 MEMBER ARMIJO: What does it mean?

15 MS. McGOVERN: Whenever we take advantage  
16 of the standard design, it means that the staff  
17 compared the two programs and found that the -

18 MEMBER ARMIJO: They're equivalent?

19 MS. McGOVERN: They're equivalent.

20 MEMBER ARMIJO: Okay. Okay.

21 MS. McGOVERN: With no site-significant  
22 issues.

23 MEMBER ARMIJO: Okay. Then another general  
24 question which I meant to ask yesterday is, all the  
25 to-resolve issues in these various chapters, the

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 number of RAIs that are at issue maybe starting with  
2 Bellefonte and - or then Vogtle and - now, how - and I  
3 think in reading the material, that the Summer -  
4 people at Summer review those RAI responses before  
5 they incorporate something by reference.

6 Exactly how does that work? I mean, what

7 -

8 MS. McGOVERN: It depends if the questions  
9 were asked of each applicant. Ideally, we ask it of  
10 just the reference COLA. And then the subsequent  
11 COLAs review the question. And if they agree with the  
12 answer, then they submit under oath and affirmation a  
13 letter saying - we call it a "me too."

14 What's the official word?

15 (Laughter.)

16 MS. McGOVERN: We call it a "me too"  
17 letter.

18 MEMBER ARMIJO: Okay. All right. And so  
19 if they have problems with it, they -

20 MS. McGOVERN: They don't have to endorse  
21 it. Vogtle will say we believe this answer to be  
22 applicable to all applicants, but each applicant has  
23 to send in an endorsement letter saying there is no  
24 site-specific differences, we agree with everything in  
25 here.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1           Sometimes they'll say we agree with  
2 everything, but the name of our organization is this.

3           MEMBER ARMIJO: Yes. So, when there's a  
4 "none" there or "incorporated by reference," they've  
5 accepted the responses of the original RAI that  
6 they're - for the chapter they're referencing.

7           MS. McGOVERN: They could. Or for fitness  
8 for duty, they did ask the question - because the  
9 organizations were different, they asked the questions  
10 of each plant, but the answers came back to be  
11 identical.

12           MEMBER ARMIJO: Okay.

13           MS. McGOVERN: So, in the SE it would say  
14 this question is similar to the question asked of  
15 Vogtle, and the answers were also similar.

16           MEMBER ARMIJO: Okay. Thank you.

17           MS. MONROE: The design-centered approach  
18 did take credit before Vogtle would respond as the  
19 reference COLA. Internally, we all reviewed the  
20 question and we tried to make sure we all came to a  
21 consensus prior to the Vogtle letter even going out or  
22 the Bellefonte letter.

23           MEMBER ARMIJO: Okay. That makes a big  
24 difference, yes.

25           MS. MONROE: That made a big difference.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MEMBER ARMIJO: Yes. Okay.

2 MS. MONROE: That way we knew from the very  
3 beginning whether or not we were not going to be able  
4 to me too it. And that would mean in our actual FSAR,  
5 we'd have a VCS supplement or something. We'd  
6 identify specifically that we were different.

7 MEMBER ARMIJO: Okay. Thank you.

8 CHAIRMAN RAY: Okay. Thanks.

9 MEMBER BROWN: My only questions were  
10 addressed yesterday on the cybersecurity. I mean, all  
11 you did was reference the DCD fundamentally in this  
12 and for your overall program.

13 MS. McGOVERN: Not the DCD for  
14 cybersecurity. The reference COLA.

15 MEMBER BROWN: I'm sorry. The reference  
16 COLA. I apologize for that. Which was also fairly  
17 sparse, for the most part. The same issue there. So,  
18 I don't have anything else right now.

19 MS. McGOVERN: Okay. Thank you.

20 CHAIRMAN RAY: Thank you. All right. We  
21 are ready, are we not, for 15, 16 and 17?

22 MS. MONROE: Great. Entering the home  
23 stretch.

24 CHAIRMAN RAY: Yes, for this particular  
25 part of the overall race. That's correct.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 (Off-record comments.)

2 MS. MONROE: Okay. I'm Amy Monroe again  
3 with SCE&G. We're going to cover the last three  
4 chapters being 15, 16 and 17.

5 Chapter 15 for accident analysis, again we  
6 incorporated the DCD by reference and all the standard  
7 material was incorporated.

8 Our site-specific X/Q values were detailed  
9 in Subsection 234 and are bounded by the DCD Section  
10 15A values.

11 ARCON96 modeling analysis was performed at  
12 the control room HVAC and annex building access doors  
13 which are our onsite receptors, and we did determine  
14 they were bounded by the DCD values.

15 In Chapter 16, we incorporated the DCD by  
16 reference -

17 MEMBER BANERJEE: Just a question. I guess  
18 the DCD says that the LOCA analysis is done with one  
19 percent uncertainty. And that is left for the COL, if  
20 I read it correctly here, to demonstrate.

21 Now, at this time, this is being done for  
22 Vogtle. It's not completed yet with the LEFM  
23 CheckPlus.

24 Are you going to reference that if it gets  
25 through the process?

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MS. MONROE: We are utilizing the same  
2 equipment and procedures and methodologies, correct.  
3 That is -

4 MEMBER BANERJEE: So, it's going to be an  
5 identical installation to Vogtle?

6 MS. MONROE: Correct.

7 MEMBER BANERJEE: So, if that gets through  
8 this process, then you're automatically - is that  
9 correct that they're automatically approved for this?

10 MR. SEBROSKY: Nothing is automatically  
11 approved.

12 MEMBER BANERJEE: Okay. So, this -

13 MR. SEBROSKY: What you heard earlier was a  
14 discussion about incorporate by reference and  
15 standard. Okay. So, there is a subtle distinction in  
16 those words.

17 Incorporate by reference, incorporates by  
18 reference DCD Rev 17 or 18, whatever the final rule  
19 is. There are backfit protections associated with  
20 that once it's approved, the standard approach when it  
21 comes to COL information items.

22 So, when you incorporate that by  
23 reference, there's COL information items that have to  
24 be addressed by every applicant.

25 MEMBER BANERJEE: Okay. So, this -

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MR. SEBROSKY: DCWG has proposed - the  
2 AP1000 DCWG has proposed that this particular issue be  
3 treated as standard.

4 And under the design-centered working  
5 group approach, the thought that was approved by the  
6 Commission is it's one review, one approval.

7 So, the thought is that the staff would  
8 replicate if it agrees that it's appropriate and it's  
9 appropriate for that particular site, it does its  
10 review. And then in its safety evaluation, it pulls  
11 in the determination and the findings that it made  
12 from Vogtle.

13 But each license has to have its own  
14 findings when it comes to that standard material.  
15 It's just a way of treating that standard material  
16 similar to a topical report.

17 MEMBER BANERJEE: So, from our point of  
18 view if we find it acceptable for Vogtle, then -

19 MR. SEBROSKY: Six other -

20 MEMBER BANERJEE: - this is identical.

21 MR. SEBROSKY: Yes, six other COLs.

22 MEMBER BANERJEE: Yes.

23 MR. SEBROSKY: Six other AP1000 COLs have  
24 lined up and treated that as standard material and are  
25 requesting that the staff treat it as standard.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MEMBER BANERJEE: So, we need to take it up  
2 for Vogtle.

3 MR. SEBROSKY: Correct.

4 MEMBER BANERJEE: You get a freebee, if I  
5 understand it on this one.

6 MR. SEBROSKY: Well, that's true for all  
7 the standard material.

8 MEMBER BANERJEE: Right. All the standard  
9 material. Okay.

10 So, you did it with one percent, which is  
11 what the DCD did.

12 MS. MONROE: Correct.

13 MEMBER BANERJEE: Okay. All right.

14 MS. MONROE: The technical specifications,  
15 they're found in Part 4 of our application. They'll  
16 be issued with the license as final. The only site-  
17 specific items, primarily the site-specific items that  
18 are bracketed and we need to fill in deal with plant  
19 boundaries, organizational titles, staffing  
20 requirements and such and aren't, what I'd say,  
21 technically based.

22 Chapter 17 deals with quality assurance.  
23 Again, everything was considered to be standard with  
24 the exception of how we deal with pre-COL activities.  
25 They're being performed under our existing Unit 1

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 Operational Quality Assurance Plan and supplemented by  
2 our New Nuclear Deployment Quality Assurance Plan.

3 Work done by subcontractors to  
4 Westinghouse and Shaw, are being performed typically  
5 under the Westinghouse or Shaw QA programs with  
6 oversight by our organizational program.

7 The New Nuclear Deployment Quality  
8 Assurance Plan is intended to be an interfacing  
9 document with the operational QA plan and work  
10 activities as they're going on at the site.

11 Our QAPD at site-specifics located in Part  
12 13, but it's based on NEI 06-14A Rev 7, that's a  
13 document that's been incorporated or been applied to  
14 most every plant.

15 Again, the only real difference for us  
16 from the rest of the utilities is that our  
17 organization looks a little bit different because we  
18 are all located at the single site. So, our nuclear  
19 organization is primarily based onsite.

20 MEMBER BROWN: What's "primarily" mean?

21 MS. MONROE: Up through the VP of -

22 MEMBER BROWN: Oh, through the VP?

23 MS. MONROE: Yes.

24 MEMBER BROWN: Okay. Thank you.

25 MS. MONROE: And implementation of the QAPD

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 that's contained in Part 4 will begin at the issuance  
2 of the license for Units 2 and 3.

3 Any questions?

4 CHAIRMAN RAY: None further, it doesn't  
5 appear. Let's go to the staff.

6 MR. HABIB: Good morning. My name is Don  
7 Habib. This is a staff presentation -

8 MEMBER BROWN: Can I interrupt just a  
9 second? One other question on the VP at site.

10 Does he report - I mean, somebody's going  
11 to be managing all the activities on the site. Site  
12 manager, whatever he's called.

13 Is the VP, does he report separately back  
14 to a headquarters function, or is he under the thumb  
15 of the site VP or whatever you all call him?

16 I don't remember the organizational chart.

17 MS. MONROE: Currently, we have a VP that's  
18 over our operating unit and a VP over our New Nuclear  
19 Deployment Group.

20 So, the operational program and the  
21 construction program have separate vice presidents  
22 that both report to a single senior VP that goes on  
23 up. The senior VP is - actually has offices located  
24 three different places so that he kind of moves  
25 around.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1                   MEMBER BROWN: Okay. So, the VP of  
2 quality, the QAPD program, he reports to the - which  
3 one? Does he report offsite or onsite to that one -

4                   MS. MONROE: Onsite. The quality manager  
5 for the respective units would report to the - up  
6 through the organization for -

7                   MEMBER BROWN: I'm trying to think is there  
8 separation from the guy responsible for getting it  
9 built and the guy that's responsible for making sure  
10 that it is built right?

11                   Did I phrase my question clearly enough?

12                   MS. MONROE: I think you did. I'll see if  
13 Al Paglia can answer it.

14                   MR. PAGLIA: Yes, like Amy said - this is  
15 Al Paglia - the VP of operation reports to the C&O,  
16 senior vice president, as well as the VP for  
17 construction.

18                   MEMBER BROWN: And the VP for QA reports to  
19 construction?

20                   MR. PAGLIA: The VP for quality for  
21 construction reports to the - I mean, the quality  
22 manager reports to the VP of construction. And then  
23 the quality manager at the plant reports to the VP for  
24 Unit 1.

25                   MEMBER BROWN: I gotcha.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MS. MONROE: This is Amy. There isn't a  
2 vice president of quality. There's a manager of  
3 quality.

4 MEMBER BROWN: You said something about a  
5 vice president for the quality -

6 MS. MONROE: No.

7 MEMBER BROWN: I thought I heard - I  
8 thought that's what I heard.

9 MR. PAGLIA: There's not a separate vice  
10 president for the quality function, per se.

11 MS. MONROE: No, there's a manager of  
12 quality -

13 MEMBER BROWN: So, he reports to the VP for  
14 construction?

15 MS. MONROE: Correct.

16 MR. PAGLIA: Yes.

17 MS. MONROE: And then the manager for the  
18 operational plant currently reports through the  
19 operational VP at this point in time.

20 MR. PAGLIA: Now, both of the vice  
21 presidents report to our chief nuclear officer who is  
22 the senior VP.

23 MEMBER BROWN: No, I'm just asking because  
24 the guy that's responsible for everything and making  
25 sure it gets built on time and under cost and as

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 scheduled is the same guy -

2 MR. CLARY: This is Ron Clary, and I'm that  
3 vice president. So, let me address it.

4 MEMBER BROWN: Oh, okay. Works for me.

5 MR. CLARY: I'm the vice president in  
6 charge of building the plant.

7 MEMBER BROWN: Construction is the -

8 MR. CLARY: From the construction side of  
9 it. And the manager of quality assurance reports to  
10 me, but has dotted line responsibility up through the  
11 senior vice president and the executive vice  
12 president.

13 MEMBER BROWN: Offsite.

14 MR. CLARY: So, procedurally, he can go  
15 around me on any question at any time.

16 MEMBER BROWN: Is this before or after he  
17 gets fired?

18 I'm saying that with a little bit of humor  
19 there. Okay. But there is a process in place where  
20 he can seek redress if he has a disagreement relative  
21 to how he thinks the QA program is being -

22 MR. CLARY: That is correct.

23 MEMBER BROWN: All depends on how much guts  
24 he's got. Thank you.

25 MEMBER BANERJEE: Maybe he's a Navy man.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MEMBER BROWN: Then he doesn't worry about  
2 being fired.

3 MEMBER BANERJEE: Right.

4 (Off-record comments.)

5 MEMBER BROWN: Okay. Thank you.

6 MR. HABIB: This is staff presentation on  
7 Chapters 15, 16 and 17. With me today is Michelle  
8 Hart from the Siting and Accident Consequences Branch.

9 And we have some material in Chapter 15 that she'll  
10 be doing.

11 For Chapter 17, the reviewers are Juan  
12 Peralta, branch chief for the Quality and Vendor  
13 Branch. And here today is Raju Patel, the reviewer  
14 from that branch. The other project managers besides  
15 myself are Sujata Goetz and Tom Galletta.

16 This is an overview of Chapter 15. There  
17 were only two site-specific items. One was the  
18 consequence of the liquid waste tank failure. And  
19 that was reviewed in Chapter 11, but there's a link to  
20 this chapter, reference to this chapter.

21 And what we will be presenting is the  
22 design-based accident for radiological consequences  
23 analysis. We'll do the site-specific presentations  
24 after the overview.

25 MR. SEBROSKY: This is Joe Sebrosky, the

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 lead project manager. We just put this slide up there  
2 to let the ACRS know that when it comes to 16.2 and  
3 16.3 in the Design Reliability Assurance Program  
4 investment protection, you may - that's the fallout of  
5 the regulatory treatment of non-safety systems, those  
6 programs. That's - both of those programs are  
7 standard and were part of the RCOLA review on Vogtle.

8 The technical specifications, the majority  
9 of the information in the technical specifications is  
10 standard. There is some site-specific information in  
11 there, but it didn't rise to the threshold of where we  
12 thought we needed to brief the ACRS.

13 CHAIRMAN RAY: Thank you, Joe.

14 MR. GALLETTA: I'm Tom Galletta also with  
15 AP1000 projects branch. Chapter 17, we had two site-  
16 specific evaluations having to do with the QA -  
17 quality assurance program before COL issuance, and  
18 then after.

19 Next slide.

20 MR. PATEL: Good morning. My name is Raju  
21 Patel.

22 MS. HART: That's my slide.

23 MR. PATEL: Oh, sorry.

24 MS. HART: Hi. I'm Michelle Hart. I'm  
25 with the Siting and Accident Consequences Branch. I

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 guess I'll be speaking first.

2           The only thing we're going to discuss in  
3 Chapter 15 is the site-specific analysis. And this  
4 was handled much like it was for Vogtle in that it -  
5 the review that we did was to make sure that they  
6 appropriately incorporated by reference the DBA dose  
7 analysis from the DCD to show compliance with the  
8 offsite and control room dose criteria.

9           Summer also took a departure for the site-  
10 specific technical support center. So, that was  
11 reviewed in Chapter 13 of the SER.

12           The resolution is that Summer did show  
13 that all of their short-term atmospheric dispersion  
14 X/Q values were bounded by the values given in the  
15 DCD. So, therefore, they could incorporate by  
16 reference the DCD analyses which show that they meet  
17 the offsite and control room criteria.

18           And since the DCD showed compliance with  
19 those criteria, therefore Summer also complies. So,  
20 it was just a comparison of the X/Q values, not their  
21 differences in analyses.

22           CHAIRMAN RAY: Okay.

23           MS. HART: Any questions?

24           CHAIRMAN RAY: Questions? Okay.

25           MR. PATEL: Good morning.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 CHAIRMAN RAY: Good morning.

2 MR. PATEL: I'm Raju Patel, operations  
3 engineer in the Division of Construction, Inspection  
4 and Operational Programs, Quality and Vendor Branch 1,  
5 Office of New Reactors.

6 I'm the lead technical reviewer for  
7 Chapter 17 of the VC Summer COL application final  
8 safety analysis report, Revision 2.

9 I'm going to pull out a brief description  
10 of the NRC staff's evaluation of Chapter 17, Quality  
11 Assurance.

12 In Slide 1, it states that in Chapter 17  
13 the applicant described the quality assurance program  
14 in two sections. Specifically, Section 17.1 and  
15 Section 17.5.

16 In final safety analysis report, Section  
17 17.1, the applicant stated that prior to COL issuance  
18 during the design and construction phases, it is  
19 implementing its existing NRC-approved operational QA  
20 plan to perform oversight of its contractors engaged  
21 in the VC Summer Units 2 and 3 pre-COL activities.

22 In June 2009, the NRC staff performed a QA  
23 program implementation inspection and identified one  
24 violation. VC Summer was not implementing its  
25 operational QA plan as described in the COL

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 application.

2 Specifically, VC Summer was implementing  
3 procedures that were based on NQA-1 quality assurance  
4 program requirements for nuclear facilities rather  
5 than on ANSI N45.2 standards as required by the  
6 existing VC Summer Unit 1 operational QA plan.

7 In a letter dated August 6, 2009, the  
8 applicant responded to the violation by providing its  
9 corrective actions. The NRC staff reviewed the  
10 response and found response to be acceptable.

11 Next slide, please. In Section 17.5 of  
12 the final Safety Analysis Report, the applicant  
13 describes the QA program that VC Summer was  
14 implementing following COL issuance.

15 The Quality Assurance Program description  
16 is based on the NRC staff-approved NEI Template 06-14  
17 Revision 7.

18 The NRC staff evaluated the quality  
19 assurance program description for acceptability  
20 against the requirements of Appendix B to 10 CFR 50  
21 and the guidance in NUREG 0800 Standard Review Plan  
22 Section 17.5.

23 The NRC staff concluded that the QA  
24 program description provides adequate guidance to  
25 establish a QA program that is properly implemented to

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 comply with the Appendix B to 10 CFR Part 15  
2 requirements.

3 Any questions regarding Chapter 17?

4 CHAIRMAN RAY: Well, it doesn't sound like  
5 it. Thank you.

6 MR. PATEL: Thank you.

7 CHAIRMAN RAY: Thank you. Well, are we  
8 done?

9 MS. MONROE: This is the benefit of being  
10 in SCOLA.

11 CHAIRMAN RAY: Indeed. Just imagine if you  
12 had had ESP as well.

13 MS. MONROE: Yes.

14 (Laughter.)

15 CHAIRMAN RAY: Okay, Joe.

16 MR. SEBROSKY: There's a new presentation  
17 that Weidong's bringing up.

18 (Off-record comments.)

19 MR. SEBROSKY: The purpose of this  
20 presentation is to go over the two action items that  
21 we believe the staff took from yesterday's meeting.

22 One was to provide HABIT verification  
23 documentation. That was the code that was used by the  
24 staff to do some of the Chapter 6 analysis -  
25 confirmatory analysis.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           And then the second is to go over a  
2 description of how the design control document, Rev  
3 18, and combined license application revisions are  
4 tied.

5           And for the first issue, I have Shie-Jeng  
6 Peng to try to address the question from yesterday  
7 regarding HABIT.

8           CHAIRMAN RAY: Okay.

9           MR. PENG: Good morning. I'm going to  
10 address my action item by combining, first, the two  
11 bullets together.

12           The staff agrees with the conclusion that  
13 the three chemicals do not post any threat to control  
14 room habitability. The reasons, I have four reasons  
15 to share with you.

16           First one, the Reg Guide 1.78 has provided  
17 us the guidance that the density of the heavier than  
18 air gases should not be considered for releases of a  
19 violent nature or for release material that becomes  
20 entrained near turbulent air near building.

21           The Reg Guide does tell us that - don't  
22 take any credit for heavy gas to fall and not to reach  
23 the reception point of interest.

24           The second bullet on the second item says  
25 that RG indicates that density of heavier than air

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 gases should not be considered for release of a  
2 violent case, for release --

3 MEMBER BLEY: Say the last one again. Are  
4 you just reading one of these or -

5 MR. PENG: Yes. Just this function I  
6 followed to perform my HABIT analysis.

7 MR. SEBROSKY: The second sub-bullet under  
8 the second bullet.

9 MEMBER BLEY: Yes, okay.

10 MEMBER BANERJEE: The issue really that was  
11 brought up was does HABIT have the capability to  
12 address heavy gas releases. Whether we agree with the  
13 second bullet or not, that's a Reg Guide. Maybe ACRS  
14 has looked at it, maybe it hasn't. We'd have to look  
15 at it.

16 But does HABIT - let's be very specific.  
17 Does HABIT address heavy gas releases or not, no  
18 matter what the Reg Guide says.

19 MR. PENG: Okay. Let me give you some  
20 clue. I check my HABIT chemical library. There are  
21 three chemicals which have higher than air density  
22 like sulfur dioxide, like -

23 MEMBER BANERJEE: It doesn't matter. There  
24 are three.

25 MR. PENG: Anyway, those are something

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 already considered in the HABIT. So, in terms of  
2 modeling, I agree with you.

3 MEMBER BANERJEE: I don't know what the  
4 model is. Is it just a dispersion model?

5 MR. PENG: HABIT did not provide very  
6 detail how those heavy gas will combine together to  
7 move. HABIT just using the regular, like a normal  
8 airway to address the transport and disperse.

9 MEMBER BANERJEE: So, just neutral density  
10 gases.

11 MR. PENG: Exactly.

12 MEMBER BLEY: Back in - I did a little  
13 looking after we heard your talk yesterday. Back in  
14 1999, this committee wrote a letter recommending  
15 strongly that HABIT be verified for its treatment of  
16 gases and the dispersion.

17 I don't know that we ever heard back on  
18 that. I wasn't able to dig out anything.

19 MR. McKIRGAN: If I could, this is Joe  
20 McKirgan for the staff.

21 MEMBER BLEY: Yes.

22 MR. McKIRGAN: I appreciate the Committee's  
23 interest there. And I guess I wanted to separate this  
24 into two issues.

25 And I think the issues with Summer, I hope

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 those have been resolved and I would appreciate some  
2 clarity on that.

3           The elevation and the conservatism in the  
4 staff's analysis and the applicant's analysis, I hope,  
5 has established that this isn't an issue for Summer.

6           I think what I'm hearing is a slightly  
7 more generic question about the applicability of HABIT  
8 and the Reg Guide. And so, I would like to offer to  
9 the Committee that the staff actually has undertaken  
10 an action. And I have on my desk, a user need where  
11 we are going to engage the Office of Research to look  
12 at some of the dispersion models.

13           We're also going to look at some of the  
14 ALOHA activities and comparisons there because many of  
15 our applicants are using ALOHA, but that is not a code  
16 that has been generically approved by the staff. So,  
17 we are looking at those.

18           Regrettably, it's not been the highest  
19 priority because we do believe we can continue with  
20 our licensing activities through the conservatism and  
21 with the existing tools. So, it hasn't always risen  
22 to the highest priority for staff's attention, but we  
23 are pursuing that. Dispersion and ALOHA are two issues  
24 that we are looking at.

25           And certainly as that HABIT and that

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 activity progresses should we need to update the Reg  
2 Guide, that activity would also come back through the  
3 Committee as part of our natural process.

4 Does that help you in any way?

5 MEMBER ARMIJO: Yes, but the problem is  
6 that what's been presented to us is acceptability of  
7 the Summer situation based on HABIT and a plate, an  
8 analysis based on a flat plane or, you know, in  
9 geometry.

10 But the real protection is -

11 MEMBER BANERJEE: The topography.

12 MEMBER ARMIJO: - topography.

13 MEMBER BANERJEE: The slope.

14 MEMBER ARMIJO: And so, you have to come  
15 back with some sort of analysis that says, hey,  
16 because of the topography, this is okay, not because  
17 of HABIT.

18 MEMBER BANERJEE: Perhaps also ALOHA -

19 MEMBER ARMIJO: And ALOHA.

20 MEMBER BANERJEE: Yes, I think I understand  
21 a little bit about what is in ALOHA. It has a pretty  
22 good dense gas model. I mean, it may not be today  
23 state of the art, but certainly acceptable or has been  
24 in the chemical industry.

25 So, from that point of view, they've used

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 something which maybe the staff has not approved, but  
2 - or even accepted, but there's good reason to think  
3 that it's pretty good.

4 And in addition the topography, you know,  
5 gives you a measure of assurance that these are pretty  
6 conservative calculations.

7 So, from the viewpoint of Summer, I don't  
8 think at least personally, but it's up to the  
9 Committee, that this is a big issue. So, it's  
10 acceptable. Maybe the staff has to put some writing  
11 into -

12 MEMBER ARMIJO: Right.

13 MEMBER BANERJEE: - appropriate words to  
14 say it for whatever reason they consider it.

15 MEMBER ARMIJO: Well, the basis for the  
16 staff's acceptance can't be just independent  
17 verification using HABIT.

18 MEMBER BANERJEE: Right.

19 MEMBER ARMIJO: It has to be ALOHA and the  
20 topography.

21 MEMBER BANERJEE: Yes, I agree with that.  
22 So, I think that - and your position that we're going  
23 to take another look at HABIT is consistent with what  
24 ACRS wrote in '99, more or less. It's fine.

25 I think if you go back and look at it,

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 there are a number of experiments that were done with  
2 heavy gases in China Lake by Lawrence Livermore Labs.

3 And there have been a lot of - there's Stony Island.

4 There's a lot of experiments that were done with  
5 freons and things.

6 So, you've got a good database. And this  
7 is a highly-worked subject. So, you know, there's no  
8 question that it's got attention.

9 MR. McKIRGAN: Indeed. And the staff, you  
10 know, we do have a process where we routinely kind of  
11 revisit some of the older reg guides.

12 MEMBER BANERJEE: Right.

13 MR. McKIRGAN: There's some resource  
14 challenges that we have to work through. But, again,  
15 we feel that for the Summer application, the analysis  
16 is conservative.

17 There are both credited and non-credited  
18 elevations, the topography. The intake elevation  
19 which isn't credited specifically for these chemicals,  
20 but does exist for the AP1000 control room intake is  
21 elevated.

22 So, the staff feels that these chemicals  
23 don't pose a threat for Summer. And we are revisiting  
24 more generically the HABIT, ALOHA and the Reg Guide.

25 MEMBER BANERJEE: I think that's fine.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 CHAIRMAN RAY: Well, it leaves open the  
2 question as to whether or not we want to not alter  
3 what was just stated about Summer, but use the Summer  
4 letter as a vehicle to make the point that you've just  
5 been making, which is that what is being used doesn't  
6 adequately address heavy gases and their unique  
7 properties.

8 MEMBER BANERJEE: We don't know that part.

9 CHAIRMAN RAY: What?

10 MEMBER BANERJEE: We don't know that.

11 CHAIRMAN RAY: Well, may not or whatever  
12 way of -

13 MEMBER BANERJEE: We only ask that it be  
14 validated originally.

15 CHAIRMAN RAY: Yes.

16 MEMBER BANERJEE: And it may work.

17 CHAIRMAN RAY: Okay. But in this case, I  
18 think everybody seems to concur that there are special  
19 circumstances that make it okay.

20 MEMBER BANERJEE: Yes.

21 CHAIRMAN RAY: But I think we want to flag  
22 the fact that it's those special circumstances that  
23 produce that outcome rather than us concluding that,  
24 well, it's probably conservative to use HABIT, right?

25 MEMBER BANERJEE: We don't know. It could,

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 it could not. May or may not. We don't know the  
2 answer.

3 CHAIRMAN RAY: Well, I'm just trying to get  
4 a checklist of things that we want to comment on even  
5 though we can say for reasons unrelated to the  
6 methodology of analysis that we believe there's not a  
7 problem in that case.

8 MEMBER BANERJEE: Also, the fact that ALOHA

9 -

10 CHAIRMAN RAY: We can write a separate  
11 letter if you want it.

12 MEMBER BANERJEE: No, no. I don't want it.

13 The fact that ALOHA gives you somewhat  
14 higher values of the control room based on, of course,  
15 flat ground is consistent with the fact that it treats  
16 heavy gases.

17 And what these models do is as the plume  
18 dilutes or the puff, then they transition into neutral  
19 gas automatically. So, it just looks at these so that  
20 the - a code like ALOHA will automatically as more air  
21 mixes into the release, will go to the neutral density  
22 modeling.

23 MEMBER ARMIJO: But it will take longer  
24 because -

25 MEMBER BANERJEE: It will take longer, yes.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MEMBER ARMIJO: Yes.

2 MEMBER BANERJEE: There is a certain  
3 distance. And the fact that you have a jet or  
4 something, the release point and turbulence of the  
5 release point does not preclude a heavy gas  
6 description. This is very well understood now.

7 So, that point, actually, is simply wrong,  
8 that second point there.

9 CHAIRMAN RAY: The second point meaning  
10 where it says -

11 MEMBER BANERJEE: That bullet.

12 CHAIRMAN RAY: Talks about -

13 MEMBER BANERJEE: RG. Well, the RG  
14 indicates that the density effect of heavier than air  
15 gases should not be considered for release of a  
16 violent nature.

17 There are many puff releases which have  
18 been found to behave like heavy gases even though they  
19 are violent initial releases. There have been a lot  
20 of experiments on this.

21 So, I mean, you need to reevaluate this.  
22 This is old, you know, and a lot of work -

23 CHAIRMAN RAY: There appears to be a  
24 consensus about that. There's also an observation  
25 that resources are difficult to come by sometimes

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 probably as we're trying to help that, sure.

2 MEMBER BANERJEE: I mean, the other  
3 question is these are really external hazards. How  
4 often are you going to be in a situation?

5 I guess San Onofre makes you very  
6 sensitive.

7 (Laughter.)

8 MEMBER BANERJEE: Okay. I'm not going  
9 there.

10 MEMBER BROWN: Do we need some type of an  
11 acknowledgment relative to Sam's comment that even if  
12 HABIT does not consider the topography -

13 MEMBER ARMIJO: The conclusions are old.  
14 Everything is okay for the -

15 MEMBER BROWN: It's kind of like the  
16 watchdog timer issue with the I&C.

17 MEMBER ARMIJO: Right.

18 MEMBER BROWN: I mean, it may not be  
19 inherently independent, but it's got a methodology to  
20 guarantee or show that you will trip if everything  
21 locks up.

22 And here's a case where the analysis may  
23 be one way, but you've got another physical  
24 configuration that effectively resolves the issue for  
25 you.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MEMBER ARMIJO: Well, Sanjoy, you know,  
2 reminded us that the ALOHA analysis done by the  
3 applicant was fundamentally a better -

4 MEMBER BANERJEE: Yes, that's -

5 MEMBER ARMIJO: - analysis and more  
6 conservative.

7 MEMBER BANERJEE: That's probably an  
8 industry - I mean, in the chemical industry, it's  
9 probably widely used. I don't know that it's in the  
10 nuclear industry, but certainly DEGADIS is widely  
11 used.

12 And the Coast Guard have done a lot of  
13 work on that. And, you know, the original code was  
14 written by Shell. And then it was adopted in the U.S.

15 And there's vast literature on this comparison to  
16 experiments and stuff like this.

17 So, if it incorporates DEGADIS, it's  
18 likely to be a pretty good code.

19 MEMBER REMPE: But what I'm hearing is that  
20 the reason you're accepting it now is because of  
21 topography. And that there's six of these plants  
22 coming through, and not all of them may have  
23 advantageous topography.

24 So, the next person may have a problem and  
25 so perhaps the staff -

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1                   MEMBER BANERJEE: But they may not have  
2 railway lines.

3                   (Laughter.)

4                   MEMBER REMPE: You might be better off,  
5 too, but they ought to maybe put it to a higher  
6 priority for the resources.

7                   MEMBER BANERJEE: All right. I think  
8 that's fine.

9                   CHAIRMAN RAY: All right. Anything  
10 further, Joe?

11                   MR. SEBROSKY: Yes, we have one more slide.  
12 And I'm looking to Frank and Eileen to aid the  
13 discussion if I miss a point that they think is  
14 important. And, hopefully, the reporter can still  
15 hear me.

16                   The question that we were trying to  
17 address is the SERs that we gave you for the design  
18 cert and also the SER that we gave you for both Vogtle  
19 and Summer have confirmatory items in them.

20                   So, how do we know that we have confidence  
21 that everything that's post-DCD Rev 17 is captured in  
22 those confirmatory items?

23                   And what this slide attempts to show is  
24 right here and above is the design cert. And below  
25 that is how the design cert affects the COL.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           And one of the concerns that Mr. Brown was  
2 asked about with specificity is the ACRS had some  
3 review and comments on the safety evaluation that we  
4 had presented along with the information that was in  
5 the DCD, and how does the staff have confidence that  
6 that information is making it into DCD Rev 18.

7           MEMBER BROWN: Well, let me rephrase it.  
8 We got commitment that those features for the  
9 overspeed trip and the reactor trip functions which  
10 allowed at least me to come through and we mentioned  
11 it in the letter and that they're in Rev 18, Rev 18 is  
12 not invoked by the COL that's Rev 17.

13           So, my concern is there's - at this point,  
14 if we write a letter and say okay, proceed with the  
15 COL, then the fundamental points, the points of the  
16 acceptability of those two technical areas are not  
17 incorporated in the official rule, whatever it is  
18 that's issued that becomes the document for regulation  
19 of the construction of these plants.

20           And I guess I'm looking at when does that  
21 COL get revised?

22           CHAIRMAN RAY: He's going to talk about it  
23 in -

24           MEMBER BROWN: He talked about confirmatory  
25 items. There's no confirmatory times with this.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 CHAIRMAN RAY: But there is a box called -

2 MEMBER BROWN: I see that.

3 CHAIRMAN RAY: Charlie.

4 MEMBER BROWN: I see it.

5 CHAIRMAN RAY: Let me finish, please.

6 MEMBER BROWN: I see it.

7 CHAIRMAN RAY: I haven't even said it yet.

8 There's a box called COL Revision there. That's all  
9 I'm trying to point to.

10 I know you see it, but maybe everybody  
11 else doesn't.

12 MR. SEBROSKY: So, I just would like to  
13 come back to that point in a second here. What I  
14 wanted to brief the subcommittee on is how the post-  
15 DCD Rev 17 changes that were initiated by the staff,  
16 and to a certain extent by Westinghouse, were included  
17 in the evaluation, not the ACRS. I'd like to separate  
18 the two issues.

19 How those post-DCD Rev 17 issues were  
20 included in the evaluation that we gave you for both  
21 Vogtle and Summer.

22 So, when you look at DCD Rev 17, the  
23 subcommittee was provided with a safety evaluation  
24 with open items and presentations on that.

25 Those open items required changes in many

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 cases, by definition, to the design cert amendment in  
2 order to close those open items.

3 So, there's these post-DCD Rev 17 changes  
4 that Westinghouse sent in by a commitment letter that  
5 were captured as confirmatory items that were  
6 presented. This is the SE that was presented to the  
7 ACRS subcommittee.

8 These changes are changes that were  
9 initiated by the staff. Independent of that,  
10 Westinghouse and the subcommittee was briefed on this.  
11 Westinghouse identified some late changes that they  
12 had packaged as design change packages. They used the  
13 ISG-11 process to determine whether or not the staff  
14 needed to review that information now or if that could  
15 wait until after COLs were issued.

16 So, there was a set of information that  
17 Westinghouse determined passed the ISG-11 process, and  
18 the staff needed to consider that information now.

19 That was provided in a separate chapter  
20 and briefed to the ACRS separately. Chapter 23. This  
21 is Westinghouse-initiated changes. This is staff-  
22 initiated changes.

23 In both cases, what you see is we  
24 independent of Eileen's group, looked at those design  
25 change packages to see if there was any changes that

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 affected the COL application.

2 And Robbie can correct me if I'm wrong,  
3 but there's one or two of these design change packages  
4 that resulted in the applicant sending us a letter  
5 saying because of these design change packages, we  
6 have to make changes to the COL.

7 That was a commitment, and that was picked  
8 up in our Safety Evaluation as a confirmatory item.

9 MR. JOSHI: One item I can point out is the  
10 RCS low-level leakage continual in a containment there  
11 was a mutual item that was addressed by the applicant.

12 It was included in Chapter 5, the SER post-COL.

13 MR. SEBROSKY: And that was picked up in  
14 this process. Separate - and these are changes, new  
15 changes identified by Westinghouse.

16 These changes that resulted in - that were  
17 initiated from the staff, one of the prime examples of  
18 a change here that affected the COL was the one  
19 percent power uncertainty.

20 And you, the ACRS Subcommittee, was  
21 briefed on our Safety Evaluation. And there's a  
22 confirmatory item associated with it because of where  
23 we're at in the process. So, this is how the staff  
24 considered the two reviews in parallel.

25 Getting back to Mr. Brown's point, and

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 Eileen maybe can talk to this with specificity, but  
2 all three of these things result in DCD Rev 18.

3 The staff has to do an independent review  
4 to agree that all three of these things were  
5 addressed.

6 DCD Rev 18 is big. It's very big.  
7 There's a possibility that one or two things may be -  
8 a handful of things may be missed. If needed, there  
9 would be a DCD Rev 19 to fix that.

10 That DCD, either 18 or 19, is going to be  
11 incorporated by reference in the COL revision. We  
12 also need to check to make sure that all the  
13 confirmatory items from the COL are addressed.

14 This is the COL revision that will serve  
15 as the final Safety Evaluation Report that's the basis  
16 for granting the license.

17 MEMBER BLEY: Let me ask something just so  
18 I'm not mixing something up. There's three boxes that  
19 are feeding Rev 18.

20 MR. SEBROSKY: Yes.

21 MEMBER BLEY: Although the SER was based on  
22 Rev 17 and our review was of that, we have seen or had  
23 the opportunity to see all of the things in those  
24 three boxes that are supposedly going to get  
25 incorporated in Rev 18; is that correct?

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 CHAIRMAN RAY: Before you answer that, you  
2 said "the SER." I just want to be - I see two SERs up  
3 there. Three, actually. One for Chapter 23, one for  
4 the mainline Rev 17 and one for the COL.

5 MEMBER BLEY: I wasn't talking about the  
6 COL.

7 CHAIRMAN RAY: I know you weren't. So, I  
8 believe you're talking about two of them. One for 23  
9 and the one -

10 MEMBER BLEY: Right.

11 CHAIRMAN RAY: What?

12 MEMBER BLEY: That's correct.

13 CHAIRMAN RAY: All right. Go ahead.

14 MS. McKENNA: Okay. What I wanted to  
15 comment on was the third box over in the second row,  
16 which is the post-DCD Rev 17 changes by commitment  
17 letters, because that's really where you bring the DC  
18 application up to date, if you will, from what was  
19 sent in, in Rev 17.

20 So, it was Rev 17, then we ask questions,  
21 we had open items, you know, interaction. And as a  
22 result, there were markups to the DCD that were  
23 offered in those commitment letters. And that's what  
24 we then memorialized in our SER as confirmatory items.

25 Which now we are in the process of going

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 into Rev 18 to check, yes, they said they would put  
2 these words in. There they are. They said they'd  
3 make this figure different. There it is.

4 And that's - so, I think it's important  
5 that we're not just reviewing Rev 17. It's kind of a  
6 compilation of what was in 17, plus all of those  
7 responses to questions and items.

8 CHAIRMAN RAY: Yes, that's true, Eileen,  
9 but Joe hasn't had a chance yet to talk about how that  
10 same process works relative to the ACRS box.

11 MR. SEBROSKY: Well, the point that I think  
12 the ACRS was trying to make yesterday that, quite  
13 honestly, I missed originally was this, this and this.

14 All three of those Safety Evaluations. The staff has  
15 confirmatory items that it needs to close. The staff  
16 has to add words to the Safety Evaluation to say they  
17 gave us the information, we agree they gave us the  
18 information that they said they were going to give us,  
19 and it closes the issue.

20 CHAIRMAN RAY: Right.

21 MR. SEBROSKY: Hopefully, it's a process  
22 issue.

23 This ACRS review and comment affecting the  
24 design cert, there is no confirmatory item in the SE  
25 that's tracking that.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 CHAIRMAN RAY: Right.

2 MR. SEBROSKY: And, Eileen, I was wondering  
3 if you could talk to that.

4 MS. McKENNA: That's correct, but we did -  
5 in response to your letter, we are going to be doing,  
6 if you will, that confirmation that the things that  
7 were promised, the watchdog timer and the turbine  
8 overspeed and the response time for PMS, those were  
9 specific items that were promised and they are  
10 included in Rev 18.

11 And so - and we will update the SER to  
12 kind of reflect those.

13 MEMBER BLEY: That's really the key -

14 MS. McKENNA: Yes, yes.

15 MEMBER BLEY: - that started all this.

16 MS. McKENNA: Right.

17 CHAIRMAN RAY: Wait a minute. There's,  
18 therefore, Eileen -

19 MEMBER BROWN: I haven't even said anything  
20 and you're telling me to wait. Just kidding. All  
21 right.

22 CHAIRMAN RAY: There is a feedback loop in  
23 between Rev 18 and the SER, one or more SERs there.  
24 That's what you just said.

25 MS. McKENNA: Yes, I mean, the very - like

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 Joe has a box at the bottom for COL FSER. There's  
2 also going to be an AP1000 amendment FSER. It's just  
3 not shown on this picture, because we have to do the  
4 same thing in terms of cleaning up the confirmatory  
5 items.

6 Ultimately when we go to the final rule,  
7 we want an SER that says here's Rev 18 or 19, whatever  
8 it turns out to be, and there's no confirmatory items.

9 It's a clean SER.

10 CHAIRMAN RAY: Yes. Well, and no one has  
11 any doubt that the staff is being very diligent in  
12 doing this sort of thing. I think, though, that this  
13 is very helpful.

14 And it might even be helpful, although  
15 it's more complicated, I realize, to try and depict  
16 what we're now talking about, which is how does this  
17 stuff that comes from the ACRS get memorialized in a  
18 staff-created document? An SER, in other words.

19 So, one might imagine as I said, a  
20 feedback loop or something that goes back to the SER  
21 and says it's now been changed or maybe another SER  
22 appears as another box on there. I'm just trying to  
23 figure out how to -

24 MS. MCKENNA: A couple of things. One is  
25 when we do the final SER, we will include the ACRS

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 letter as part of our chapter, if you will, of the SER  
2 so that that is captured for the future.

3 I think it is probably worth - I'm trying  
4 to figure out the best place to sprinkle, if you will,  
5 those couple of items that came from the kitty rather  
6 than originated from the staff, you know.

7 So, in the future if somebody says well,  
8 gee, where did that come from, you know, they can  
9 figure out that well, the reason that the ITAAC was  
10 changed in that particular way was because of the  
11 interaction with the Committee.

12 So, we may need to put a few words in our  
13 SER in the final -

14 CHAIRMAN RAY: Well, Charlie's concern,  
15 tough, I think, is illustrated by this picture up here  
16 because it doesn't itself - the picture doesn't answer  
17 the question how do you make sure that the things that  
18 we're committed to in the course of the ACRS review,  
19 which is what we're talking about, really are there?

20 We know that you're checking that. That's  
21 not the question. But the issue is how is that  
22 process-wise shown?

23 MR. AKSTULEWICZ: This is Frank  
24 Akstulewicz. I'm not sure I'm going to shed any more  
25 light on this, but I'll try.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           One of the things that was done by  
2 Westinghouse before they actually submitted Rev 18,  
3 was to incorporate in the language to resolve the  
4 concerns that Mr. Brown raised. So, we did not get  
5 Rev 18 until those issues were retired within the  
6 document.

7           Second, the Working Group met on the  
8 language that was in - was being proposed for  
9 incorporation into Rev 18. All right. And it  
10 satisfied themselves that they were not going to need  
11 to take any departures from that language.

12           So, all the issues that were raised by the  
13 committee are IBR'd by all of the COLs. There are no  
14 plant-specific -

15           MEMBER ARMIJO: Well, that may not be  
16 totally true. There were some late-breaking issues  
17 resolved.

18           CHAIRMAN RAY: Our letter was two weeks  
19 later than the -

20           MEMBER ARMIJO: Right. For example,  
21 Westinghouse committed to do some materials testing on  
22 pump flywheel.

23           MS. McKENNA: That's correct, but that did  
24 not -

25           MEMBER ARMIJO: And -

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MS. McKENNA: - involve a DCD change.

2 MEMBER ARMIJO: And that was not in Rev 18.

3 MS. McKENNA: It's not a topic that we were  
4 going to include in the DCD. It was kind of a  
5 supporting document in responding to the Committee's  
6 concern, but it doesn't - wasn't something that -

7 MEMBER ARMIJO: Well, was it going to be  
8 addressed somewhere -

9 MS. McKENNA: We're not going to include it  
10 in the DCD. It was going to be -

11 MEMBER ARMIJO: In the SER or where does it  
12 get included as a follow-up to make sure it got done?

13 MS. McKENNA: It's going to be an action  
14 item, if you will, for the staff to follow in the  
15 future, but it's not something that we were planning  
16 to incorporate in the SER or the DCD.

17 MEMBER ARMIJO: Even the language of the  
18 SER?

19 MS. McKENNA: The SER has already been  
20 written and it reflected the staff's position that the  
21 design of the pump with its capability of containing  
22 the flywheel breaking apart was the basis for the  
23 staff acceptance.

24 We understand the Committee didn't fully  
25 agree with that and wanted more, and Westinghouse has

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 agreed to do that, but the staff believes its SER  
2 stands.

3 CHAIRMAN RAY: Well, okay. But it still  
4 doesn't address the question given all of those facts,  
5 you guys are doing something. You have an action  
6 item, as you called it. And the status of that is  
7 something that we're just trying to be clear about.  
8 How it happens. How it takes place.

9 MEMBER ARMIJO: Or whether, you know.

10 CHAIRMAN RAY: Yes, let's say we were  
11 talking about a plant that wasn't on the cusp of  
12 getting a license, but it was a design that  
13 nevertheless gets - goes forward at some future time.

14 We are talking about the issue that is on  
15 our mind. I don't want to call it a major concern  
16 because, like I say, I'll grant that the staff - I  
17 think we all would agree the staff is very diligent in  
18 trying to make sure that these things happen.

19 But just from a process standpoint, it  
20 kind of happens ad hoc, I guess would be the way to  
21 put it. And I would - this is a good thing if you  
22 guys brief the Commission, for example, on, well, how  
23 does this stuff all really happen when you're involved  
24 in real world as opposed to theory. Well, this is how  
25 it happens, except it's even more complicated, is the

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 point.

2 Now, what I was trying to talk about in  
3 addition to what Charlie was, because I thought we  
4 were in COL space at the time, was how does this stuff  
5 get incorporated in the COL box down there?

6 And of course the COL revision is going to  
7 refer to 18 or 19 as applicable, but it also needs to  
8 carry along this other baggage where it's relevant.

9 MS. McKENNA: All I've got to say is that -  
10 let me take the specific cases of where there were  
11 things that were put in Rev 18.

12 I think as Joe indicated where the COL  
13 then references - incorporates by reference Rev 18,  
14 that then becomes part of their FSAR.

15 So, it's really only if there were, for  
16 example, a COL item or something like that that came  
17 along with that that they had some additional action  
18 or that they needed to change something else in their  
19 application as a result of this particular change that  
20 they would then have to do anything more than just  
21 reference to Rev 18.

22 CHAIRMAN RAY: Well, that was very tidy,  
23 Eileen, but, you know, as I said before, the fact of  
24 the matter is the ACRS letter came out two weeks after  
25 the Rev 18 was submitted. So, it didn't really happen

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 that way.

2 And there was a lot of debate going on  
3 among the Committee as to what comments exactly should  
4 be in that letter. And how that then would get  
5 captured has got to be something more subtle than  
6 what's shown here because Rev 18, I guess, that came  
7 in on December 1st.

8 MR. AKSTULEWICZ: And this is Frank  
9 Akstulewicz. We do owe the Committee an answer, as is  
10 our process, in response to the letter that will  
11 document how we will capture all of this.

12 CHAIRMAN RAY: All right.

13 MR. AKSTULEWICZ: So, I think this  
14 discussion today is very valuable and it helps us  
15 frame our response back to the Committee about how  
16 we're going to make sure that the issues or concerns  
17 are being managed and tracked to the Committee's  
18 satisfaction, because you'll have an answer and you'll  
19 be able to reply back about whether or not it's  
20 reasonable or not.

21 CHAIRMAN RAY: Sure.

22 MR. AKSTULEWICZ: So -

23 CHAIRMAN RAY: Maybe that's the best  
24 answer, Frank.

25 MR. AKSTULEWICZ: Okay.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MEMBER BROWN: That says you're going to  
2 come back and tell us how you did that.

3 MR. AKSTULEWICZ: That's correct.

4 MS. McKENNA: One thing is that we have a  
5 written response to the letter. You will see that  
6 probably in a week or so.

7 Then, for example, I think what we've  
8 indicated is that for the pump, Westinghouse made a  
9 commitment to the testing, we would provide that  
10 information back to the Committee when we receive it.

11 There was an item in there about the shell  
12 cooling that asked the staff to go follow up and make  
13 sure that that issue was dispositioned and we would  
14 provide a response back thinking we're going to have  
15 to write a supplemental SER on some part of that. And  
16 we would provide that document to the Committee as  
17 their affirmation as to how that particular item in  
18 the letter was dispositioned.

19 I think for the particular items that were  
20 included in Rev 18, our response would be they put  
21 these items in Rev 18 in the manner that they said  
22 they were going to do during our interactions with the  
23 Committee. So, we believe that these are done.

24 MEMBER BROWN: Two out of three.

25 MS. McKENNA: Yes.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MEMBER BROWN: The discussions and the  
2 stuff that I saw subsequent to those discussions  
3 relative to the overspeed trip that was covered in an  
4 RAI, which was fairly definitive in terms of what they  
5 would do and what the changes would be in the DCD and  
6 Rev 18.

7 MS. McKENNA: Right.

8 MEMBER BROWN: We also saw the -

9 MS. McKENNA: The ITAAC on the response  
10 time trip.

11 MEMBER BROWN: The ITAAC on the response  
12 time. That was fairly definitive.

13 MS. McKENNA: Right.

14 MEMBER BROWN: They showed where it was  
15 going to be.

16 The one on further defining and  
17 characterizing the watchdog time function and how it  
18 had to be implemented is largely captured in the  
19 transcript from the list that Joe -

20 MS. McKENNA: Yes, and -

21 MEMBER BROWN: And how that gets framed -

22 MS. McKENNA: Well, one of the things -

23 MEMBER BROWN: - in Chapter 7 or wherever  
24 it's - I guess it's Chapter 7 - is right now kind of a  
25 amorphous. Haven't really seen is that acceptable.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 I mean, I don't think I even have the  
2 transcript yet. So, if I reviewed it, I probably  
3 couldn't remember enough for me to - the details  
4 because he was very good at going through as to how  
5 they were going to do that.

6 And it bounds what people can do when they  
7 go out to buy this stuff, because that's where these  
8 specifications come for their procurements and reduces  
9 the latitude which was I was looking for, because you  
10 need that constraint to guarantee the response of that  
11 system for reactive trip functions.

12 That's what I was depending on you to then  
13 take those transcripts, look at DCD, and that's - I'd  
14 like to have that explained as to how they did that  
15 and be able to see it.

16 MS. MCKENNA: Well, one of the things that  
17 was done was when Revision 5 took a WCAP that was  
18 discussed, has been submitted and we have that  
19 document and we can -

20 MEMBER BROWN: Yes, I think they said -

21 MS. MCKENNA: - make that available to  
22 you.

23 MEMBER BROWN: - they submitted that  
24 roughly at that time, also.

25 MS. MCKENNA: Yes, it was a few weeks

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 later, I think.

2 MEMBER BROWN: Yes.

3 MS. McKENNA: So, that's, I think, where  
4 most of that information would be captured.

5 MEMBER BROWN: That's correct. It was  
6 supposed to be put in the WCAP.

7 MS. McKENNA: Right.

8 MEMBER BROWN: So, as long as there's a  
9 process to come back and tell us what we got and how  
10 it was done, I wanted to make sure we had visibility  
11 of that. And that was one of the purposes of my  
12 question yesterday.

13 MS. McKENNA: Okay.

14 CHAIRMAN RAY: Well, I think Frank's point  
15 about, well, we'll get a letter and then we can look  
16 at the letter and it will tell us what was done, is  
17 probably about the only way we can deal with this.  
18 Because otherwise, there's going to be a whole  
19 scramble of arrows over there on the bottom right  
20 side.

21 MEMBER BROWN: If we get the WCAP, the  
22 letter, you know, the other two I'd just like to know  
23 that they're going to be there and the COL will be  
24 revised to pick up Rev 18 which then covers those.

25 So, if it says Rev 18, not Rev 17, you

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 look at the incorporate by reference part.

2 CHAIRMAN RAY: Chapter 1.

3 MR. AKSTULEWICZ: This is Frank  
4 Akstulewicz. I understood that there were - and maybe  
5 that's the second, but I understood there were two  
6 questions that we were trying to get through in terms  
7 of process issues.

8 One was the issues we just talked about,  
9 which is the incorporation of the realtime challenges.

10 But the second was the incorporation by the COLs and  
11 to their specific applications.

12 CHAIRMAN RAY: Yes. And that's what I  
13 meant, Frank, by pointing at that box called "COL  
14 Revision."

15 MR. AKSTULEWICZ: Correct.

16 CHAIRMAN RAY: And the arrow coming into it  
17 could, as we discussed earlier, omit something like  
18 Charlie has been talking about. So, go ahead.

19 MR. AKSTULEWICZ: My one and only comment  
20 in that regard is, yes, they will need to provide a  
21 modification of their application. The schedules are  
22 roughly end of the month for both Vogtle and Summer to  
23 update their current application revisions that will  
24 incorporate all of the line item that is below the DC  
25 paths. All right.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           But more importantly, and I think Joe  
2           tried to talk about this, as much of that information  
3           as we could present to the Committee about what  
4           changes we're going to be incorporating, we've done  
5           that in our Safety Evaluations.

6           It's kind of the same structure as what we  
7           were using for the DCs, which was as issues were  
8           changing on the COLs, we tried to factor that into our  
9           SER supplements as confirmatory items.

10          So that when that revision does come in,  
11          it's not going to be new technical issues that we  
12          haven't seen before. We've seen all the technical  
13          issues and it's going to be a check - I hate to use  
14          the term "checklist," but that's in general what it  
15          would be is a checklist to say yes, they've committed  
16          that or they've made that commitment to us and, yes,  
17          they followed up with that commitment as part of their  
18          - a revision of the application.

19          So, I'm not sure that that helps the  
20          Committee with the concern, but that is going to be  
21          the process.

22          CHAIRMAN RAY: I think we've been  
23          adequately satisfied. I'll just say the difference  
24          between the real world and theory, the real world  
25          things happen sometimes in parallel that in theory

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 should happen in series.

2 That's just where we are. Joe.

3 MR. SEBROSKY: There's just two more points  
4 I was hoping to make before the next part of the -  
5 this would end the Summer presentation. And the next  
6 presentation is to prepare for the full Committee  
7 meeting in the latter part of this week.

8 The first point that I wanted to make sure  
9 you were aware of, Chairman Ray, and I think you  
10 already are, the ACRS letter report that we're  
11 requesting on Summer is based on this product, that  
12 SER with confirmatory items.

13 If the subcommittee needs more  
14 information, that's not - this is the last  
15 subcommittee meeting that we have scheduled for  
16 Summer.

17 CHAIRMAN RAY: Yes.

18 MR. SEBROSKY: The full Committee meeting  
19 for Summer is scheduled for February. So, if we  
20 didn't satisfactorily address the issues, that would  
21 be problematic to go to the full committee.

22 But we believe that - or what we attempted  
23 to show is that the staff feels comfortable in going  
24 forward with the process. And we're requesting a  
25 letter report based on Rev 2 of the application and

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 this Safety Evaluation.

2 MEMBER BROWN: And Rev 17 of the DCD.

3 MR. SEBROSKY: Which incorporates by  
4 reference - Rev 2 of the application incorporates by  
5 reference DCD Rev 17 with the confirmatory items in  
6 it.

7 So, it's more than just this. But the way  
8 the confirmatory items are set up, the applicant's  
9 committed to make these changes, these changes, and  
10 changes as a result of staff's review.

11 So, it's DCD Rev 17, plus the issues that  
12 are captured as confirmatory items.

13 CHAIRMAN RAY: Well, it is legally - I will  
14 tell you that I believe that you're going to make sure  
15 that anything that affects the COL that comes down  
16 from that vertical line is in fact incorporated as  
17 well.

18 MR. SEBROSKY: Yes. So, that was the first  
19 point to -

20 CHAIRMAN RAY: Yes, we're going to try and  
21 make sure anybody who has any issues remaining on  
22 Summer as part of the subcommittee, has a chance to  
23 identify that here shortly.

24 MR. SEBROSKY: So, the first point that I  
25 wanted to make was the basis for what we believe could

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 serve as the basis - or partially the basis for the  
2 Safety Evaluation.

3 And the second point was to make - the  
4 second point I was trying to make was this ends the  
5 presentation for the staff. There are no other  
6 subcommittee meetings scheduled.

7 Of course we would schedule them if you  
8 deemed necessary, but the time frame - the next time  
9 to interact with this body would be at the full  
10 committee meeting in February. That's the plan.

11 CHAIRMAN RAY: Yes.

12 MR. SEBROSKY: Amy and Al, was there -  
13 since we're closing up on the Summer portion, are  
14 there any closing words that you wanted to say?

15 MS. MONROE: The only point I'd like to  
16 make is we - I think we helped try to demonstrate the  
17 benefits of utilizing the Part 50 II process and  
18 additionally utilizing a design-centered approach  
19 where it is a more efficient use of everybody's time  
20 and resources.

21 We found it to be advantageous. We were  
22 working out a few bugs as we go through the first  
23 portion of it, but we really found it to be a process  
24 that has worked well.

25 It also combines the talents of not only

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 your own individual utilities, but you get to take  
2 credit for everyone else in your design center, which  
3 provides a much better overview and review process for  
4 everything we're looking at.

5 So, I find it to be actually, overall, a  
6 better process to utilize. And we hope that it was  
7 beneficial to you.

8 And as Joe has pointed out, if you have  
9 any questions or concerns that are remaining, we would  
10 like to do anything we could to help close those out  
11 to make it such that we can move forward with the full  
12 committee meeting in February.

13 CHAIRMAN RAY: Yes. Well, and as I  
14 indicated, I do want to poll everybody here. Because  
15 as I anticipate if there is anything that applicant  
16 would like to respond to further, there is at least  
17 the opportunity at the full committee meeting.

18 We hopefully won't have anything that  
19 hasn't already by then been discussed here in this  
20 subcommittee meeting, but at least that possibility  
21 presents itself.

22 Can we get Vogtle to join us now and talk  
23 about full committee meetings in both cases?

24 We've spoken a little bit here about the  
25 full committee meeting for Summer. We'll talk about

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 the two of them recognizing they're separate. But on  
2 the other hand, one's a reference and one's a  
3 subsequent COLA. And, therefore, they're not without  
4 some relationship.

5 (Off-record comments.)

6 CHAIRMAN RAY: Sure. Come on up front up  
7 here and let's just have a little discussion about  
8 full committee meeting.

9 First, on Summer just to let you know,  
10 it's likely that a letter would include some  
11 affirmation of the matter that Mike Ryan discussed  
12 with the applicant concerning the discharge line, but  
13 it raises the question as to what - because it doesn't  
14 make sense to make a comment like that on an SCOLA  
15 when it applies equally to the RCOLA.

16 Amy, can you tell us anything about the  
17 discharge line on Vogtle and - waste discharge line  
18 I'm talking about. And if you can't, that's fine.

19 Where does it discharge to and how is it  
20 designed?

21 MS. AUGHTMAN: Yes, Wes, he's coming up,  
22 and we probably did not catch all of the discussion on  
23 the SCANA application this morning. So, if there's -  
24 if someone could help put that in context for us -

25 CHAIRMAN RAY: Well, I'll just like Mike

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 summarize again what - it's merely a matter of an  
2 issue that, as often happens, the ACRS mentions at  
3 this point in time.

4 But, like I say, to mention it on Summer  
5 and not have mentioned it on Vogtle if it applies  
6 equally, is probably not what we want to do.

7 So, go ahead.

8 MEMBER RYAN: The discussion that was  
9 talked about was the HDPE line that was going to be  
10 sort of a uniform construction and how it seals with  
11 groundwater monitoring as the only leak detection  
12 system.

13 MR. SPARKMAN: That is correct past the  
14 point of mixing.

15 MEMBER RYAN: Past the point of mixing, and  
16 there was a manhole where that connection would be.

17 MR. SPARKMAN: That is correct. We have  
18 double-wall pipe going up to that point.

19 MEMBER RYAN: Yes.

20 MR. SPARKMAN: And from that point down,  
21 it's single-walled HDPE.

22 MEMBER RYAN: And I guess, you know, from  
23 past experience at other facilities, that can lead to  
24 trouble if there's any problem with that pipe anywhere  
25 along the way. And detecting it in groundwater is

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 fine and good, but you've already got a problem you  
2 now have to fix whereas a different kind of piping  
3 might avoid the problem altogether.

4 MR. SPARKMAN: Well, what it does also do  
5 is eliminate a lot of the problems of leak we've had.

6 A lot of the examples that you have of leaks are on  
7 carbon steel piping. So, HDPE piping eliminates that  
8 mechanism for leakage.

9 MEMBER RYAN: That's a strong word,  
10 "eliminate."

11 MR. SPARKMAN: Well -

12 MEMBER RYAN: Sixty to a lifetime, though,  
13 you kind of get to thinking about has that been  
14 demonstrated or proven?

15 And I'm not saying it hasn't.

16 MR. SPARKMAN: Right.

17 MEMBER RYAN: I'm just asking the question.

18 MR. SPARKMAN: I didn't mean it could  
19 necessarily eliminate leakage. I was saying it would  
20 eliminate that mechanism. You won't have carbon steel  
21 corrosion, because it's not carbon steel.

22 MEMBER RYAN: Okay. So, that's off the  
23 table, but how's this going to hold up for sixty years  
24 and do we have an insight there?

25 MR. SPARKMAN: Right. I don't know that

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 we've got sixty years worth of information. We do  
2 have some information on piping that is above ground  
3 and the life of that. And I don't know that it's  
4 sixty years worth, but it's a long amount of time in  
5 terms of the life of it.

6 And most of the problems that I've found  
7 have either been through people backing into it or,  
8 you know, some kind of -

9 MEMBER RYAN: Physical damage to it.

10 MR. SPARKMAN: - external damage as  
11 opposed to - now, there also are problems above ground  
12 sometimes with UV.

13 MEMBER RYAN: Yes, sure.

14 MR. SPARKMAN: But this will be below  
15 ground. It will be buried piping. And it also - I  
16 guess in their presentation, they talked about the way  
17 that it's butt welded together.

18 MEMBER RYAN: Yes.

19 MR. SPARKMAN: And that the joint is  
20 actually indistinguishable if you look at it from the  
21 normal pipe.

22 And so once you put it together and you  
23 test it, make sure that it's sound, we expect it to  
24 last sixty years, but we don't have, that I know of,  
25 sixty years worth of life experience to -

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MEMBER RYAN: Or any kind of accelerated  
2 testing information or anything else, really, that  
3 would give you the confidence.

4 MR. SPARKMAN: I personally am not aware of  
5 that, but there may be some.

6 MEMBER RYAN: So, I think at this point I'd  
7 ask Mr. Chairman Ray to think about this. It's  
8 certainly a question I think needs to get addressed.  
9 Because at this stage, you know, you could ask the  
10 reasonable question well, a double-wall pipe sort of  
11 gives you a detection mechanism that's in place long  
12 before you have a groundwater problem.

13 MR. SPARKMAN: That is true, and we did  
14 discuss that.

15 MEMBER RYAN: And a sixty-year investment  
16 in a double-wall pipe versus groundwater monitoring  
17 wells and constant monitoring programs and all that, I  
18 just don't know if there'd be a reason not to have a  
19 double-wall pipe, to tell you the truth.

20 I mean, you've got an awful lot of  
21 groundwater monitoring. I understand those issues.  
22 So, that's something at least to think about.

23 MR. SPARKMAN: Okay.

24 CHAIRMAN RAY: Well, we had not discussed  
25 it in the context of Vogtle, and I did want to do that

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 to the extent that it was applicable.

2 MEMBER RYAN: Well, I think based on your  
3 comment, it would apply to both.

4 MEMBER ARMIJO: So, I'm not - I don't think  
5 double-wall full-length would be necessary. My only  
6 concern is, you know, I think it's a superior material  
7 to the carbon steels and the cast irons. And the  
8 mechanisms that have damaged those systems don't apply  
9 here, but there may be other mechanisms that we're not  
10 aware of yet, time-dependant failure mechanisms.

11 And, generally, where we have problems are  
12 in joints, you know. And even steel-welded joints  
13 look great, but they can degrade. And I'm just not  
14 sure that there might not be some degradation  
15 mechanism of the butt welded or fused high-density  
16 polyethylene pipe whether they're pinholes or fissures  
17 that are - they pass the initial pressure test.

18 But with time, degrade and you have a  
19 local leak. And whether you might want to consider  
20 some sort of a very local near to a joint monitoring,  
21 that's just an experiment. I don't know.

22 But as opposed to waiting until - if  
23 something leaks, you don't know about it until you  
24 detect it in a deep well rather than -

25 CHAIRMAN RAY: Wes, why are you using

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 double-wall pipe for the first increment of the  
2 distance?

3 MR. SPARKMAN: Because at that point, you  
4 do not meet the 20.1406 regulations. So, any leakage  
5 there would be above those levels.

6 Once the point it gets to the mixing,  
7 you're below those levels.

8 MEMBER ARMIJO: So, beyond that it becomes  
9 more like an operational issue, a nuisance.

10 MR. SPARKMAN: Well, beyond that it's the  
11 same level that you're actually discharging to the  
12 river.

13 MEMBER ARMIJO: So, you know, it doesn't  
14 make any sense to double wall after that.

15 CHAIRMAN RAY: Well, discharging to the  
16 river and discharging to the groundwater are two  
17 different things, as we've learned to our -

18 MEMBER ARMIJO: Even if -

19 MEMBER RYAN: I think that's the point that  
20 I would say is that, you know, even though it's the  
21 same as the discharge point, it's not the same  
22 discharge.

23 MR. SPARKMAN: That's correct.

24 MEMBER RYAN: And, you know, I mean,  
25 there's example after example of groundwater

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 contamination being real expensive remediation  
2 activities.

3 CHAIRMAN RAY: Well, I don't know whether  
4 we're going to give just some free advice here which  
5 we've given or, in any case, we understand you're  
6 compliant. No misunderstanding about that, but it is  
7 an issue that at least will have to be worked through  
8 by the Committee as we go forward.

9 Now, what I'm going to do is I'm going to  
10 run through my list of things. To the extent that we  
11 - that the applicants or staff wish to have a further  
12 discussion of these items, we welcome that. But I may  
13 depending on how much time is involved, decide that  
14 we'll take a break.

15 I just don't want to do that until at  
16 least I've found out if there's anything you guys want  
17 to say about them.

18 The items on my list, and I'll ask the  
19 other members to follow me on this, that would - this  
20 is not at the point of being a recommendation or  
21 requiring any action. It's merely things that we have  
22 covered during the course of our review mostly of  
23 Vogtle that we want to acknowledge. Okay. But we'd  
24 like to get it right, also.

25 One is, Dennis, you're still thinking

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 about saying something on the PRA and the site-  
2 specific PRA needing to include things that can affect  
3 the plant safety that may arise during the course of  
4 plant operations such as noncompliant debris loading?

5 MEMBER BLEY: Right. I'll put something  
6 together on that. And it doesn't affect the COL at  
7 this point.

8 CHAIRMAN RAY: But we would put it in the  
9 COL, do you think?

10 MEMBER BLEY: Yes, I would like to. I  
11 don't know where else to put it unless we do a  
12 separate -

13 CHAIRMAN RAY: Yes.

14 MEMBER BLEY: Got all the COLs that might  
15 come forward, so that's -

16 CHAIRMAN RAY: Yes, I just don't want you  
17 to be surprised by it. You understand what our  
18 concern is. He talked about it yesterday.

19 Is there anything you want to say further?

20 MS. AUGHTMAN: There's nothing really else  
21 that we think we can help add to what I think you want  
22 to say. So, you know, again, if you have more  
23 specific questions, then we'll be happy to address  
24 those.

25 We do have some references for the URD

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 that Westinghouse was able to dig up.

2 MEMBER BLEY: Oh, good. Thank you.

3 MS. AUGHT MAN: So, there is - we think at  
4 least what we were able to find is that those numbers  
5 are still within the 1999 version of the URD.

6 MEMBER BLEY: I appreciate that. And this  
7 might not end up in our letter, of course. This is  
8 just something I want to see.

9 CHAIRMAN RAY: Yes, none of these things  
10 are guaranteed at all. They're just on the list of  
11 discussions still pending.

12 Another one which we did discuss in the  
13 December subcommittee meeting was where the limit on  
14 debris is captured and what its status is in terms of  
15 Tier 1/Tier 2 in the tech specs or not and whether it  
16 can be changed in a 5059 kind of change.

17 I think all of us understand you'd have a  
18 hard time writing a 5059 for a higher debris loading.

19 But as you saw in the GSI-191 letter, it is a fact  
20 that our review treats the limit currently as provided  
21 as very important and providing margin against  
22 uncertainties that remain in the analysis.

23 And so, we just want to be comfortable  
24 that that will be recognized ten years from now or  
25 whenever. So, that is an issue that we still need to

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 work through how to address that.

2           There is the - and this is specific to the  
3 COL - the ISI/IST program for squib valves that at  
4 least I had made a note that we wanted to comment that  
5 when it is developed, I guess, as the current status  
6 is, you know, we're not going to know anything more  
7 now until the program is developed by the COL  
8 applicants, that it needed to be available for our  
9 review.

10           I have it fair, Charlie?

11           MEMBER BROWN: Yes, that's how it came out.

12           If you set aside the other issue, that's the only  
13 thing -

14           CHAIRMAN RAY: Yes, there's the  
15 qualification, but -

16           MEMBER BROWN: Putting aside the ISI/IST -

17           CHAIRMAN RAY: I'm talking about - yes,  
18 right.

19           MEMBER BROWN: What can you do and what's  
20 reasonable and what make sense and what doesn't make  
21 sense, we didn't get a definitive answer on that.

22           CHAIRMAN RAY: Right. Well, and -

23           MEMBER BROWN: It's to be developed.

24           CHAIRMAN RAY: It's to be developed. And  
25 so, we probably are going to say because of the

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 importance of the valves and the ISI/IST program to  
2 safety, that we would like to take a look at what is  
3 developed to implement the program to make sure that  
4 we're satisfied with that.

5 We'll make note of the fact that Vogtle,  
6 and of course this is also true of Summer, will have a  
7 combined TSC for units at the site. Differing units  
8 at the site.

9 Sanjoy, where are you on calorimetric  
10 uncertainty in terms of whether we want to say  
11 something or not?

12 MEMBER BANERJEE: I can say something.

13 CHAIRMAN RAY: Well -

14 MEMBER BANERJEE: Always say something.

15 CHAIRMAN RAY: I didn't ask the question  
16 correctly. Whether or not you envision that we  
17 probably will want to make some comment in the letter.

18 MEMBER BANERJEE: Yes.

19 CHAIRMAN RAY: And is there anything that  
20 they can help us further on -

21 MEMBER BANERJEE: Yes.

22 CHAIRMAN RAY: - at this time.

23 MEMBER BANERJEE: Yes, there's a lot they  
24 can help us with. So, we got in response to our  
25 request yesterday, a letter dated October 29th, 2010,

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 that was sent by Vice President Ivey of Southern  
2 Nuclear Operating Company to somebody in the U.S.  
3 Nuclear Regulatory Commission.

4 In any case, this letter addresses some of  
5 the issues I brought up yesterday, but that it remains  
6 that there are some issues which are still not  
7 entirely clear.

8 The staff have stated their position on  
9 this, I think, in the last meeting. There's a slide,  
10 right, on it? But I think we still have some  
11 questions which are not entirely clear.

12 CHAIRMAN RAY: All right.

13 MEMBER BANERJEE: So, I've been going  
14 through this and the transcripts of the meetings we  
15 had in July 8, 2004, and there are -

16 CHAIRMAN RAY: That's before your time.

17 MEMBER BANERJEE: Yes. For your benefit or  
18 the Committee's benefit, the ACRS never wrote a letter  
19 on this matter.

20 They wrote sort of a - the only thing I've  
21 been able to find, and we've been doing this due  
22 diligence, is a letter July 30th, 2004, which was  
23 written to Nils Diaz, which has mention of this  
24 amongst several subjects.

25 And it says the Committee has deferred

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 action to write a letter until it has reviewed  
2 additional documents and had further discussions with  
3 the staff and industry.

4 That's the only thing I've been able to  
5 find. And the transcripts certainly leave me the  
6 feeling that the issue is quite an open one.

7 Now, I've read the staff SERs and all  
8 these things. We've not commented on that. So, I  
9 don't know quite what to do right now.

10 The staff has sort of accepted this.  
11 Though, I must say that there was a lot of contentious  
12 debate between two sides. As it happens, one of these  
13 sides was Westinghouse, and on the other was this  
14 Caldon later acquired by Cameron.

15 And there was - this was, let's say, a  
16 very - I'm trying to find the appropriate euphemistic  
17 word for it. Let's say a heated discussion.

18 And the Westinghouse method which they  
19 called Cross-Flow or something, same sort of thing,  
20 the staff at the end of the process suspended approval  
21 for.

22 And this was suspended on the grounds that  
23 they did not have sort of in situ or in-plant - one of  
24 the grounds. There was perhaps others - calibration  
25 which the Caldon people somehow were able to do.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           The details have escaped me. I'm still  
2 reading this huge amount of documentation. How they  
3 do in-plant calibration off the Caldon except against  
4 the venturi, which are the reason for the two percent  
5 at the moment, still is a little baffling to me.

6           The second aspect which baffles me is -  
7 and Jack Sieber was actually the chairman of the  
8 subcommittee which looked at this. And he probably -  
9 sounds equally baffled in the - in the transcripts -  
10 was how they take account of velocity profile effects.

11           Now, specifically in the staff finding, it  
12 says that - the fourth bullet which is not addressed  
13 in the letter completely from Southern Nuclear, is  
14 this justification - this has to do with the  
15 justification by any person or any plant which is  
16 trying to install one of these, this justification  
17 should show that the meter installation is either  
18 independent of the plant-specific flow profile for the  
19 stated accuracy or the installation can be shown to be  
20 equivalent to known calibrations and plant  
21 configurations for the specific installation including  
22 the propagation of flow profile effects at higher  
23 Reynolds numbers.

24           Now, the problem is this: That they do not  
25 test these machines at the full plant Reynolds

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 numbers. So, what happens as the Reynolds number goes  
2 up, is the wall region of the flow becomes more and  
3 more important. The velocity profile becomes more and  
4 more peaked.

5 They use some procedure which they call  
6 logarithmic extrapolation, which I have not been able  
7 to get to the bottom of yet, to do this so-called  
8 extrapolation to higher Reynolds numbers.

9 How this extrapolation is being applied in  
10 this case and so on, we need to know. We need a lot  
11 more detail before we can sort of say ACRS has  
12 reviewed this and agrees with the staff or disagrees  
13 with the staff on this matter.

14 We are, I would say, very far from having  
15 the information needed to make such a determination.  
16 I have to deal with this because in some way - well,  
17 we have to, certainly, because this is going to become  
18 sort of the standard now. Everybody is going to just  
19 use this after this. They're saying by reference to  
20 this RCOLA that we can do it. So, this is the first  
21 of the one percents.

22 The fact that it's being done in other  
23 plants right now may or may not be significant. The  
24 configurations are different. The calibrations might  
25 be more appropriate to what is being done in those

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 plants.

2 I don't know. I haven't looked at this.  
3 I don't know how the staff has agreed to one percent  
4 given the uncertainties with the Reynolds numbers.

5 MEMBER ARMIJO: Isn't there one - an  
6 approved topical report on the initial design, the  
7 initial version of the -

8 MEMBER BANERJEE: The ACRS has never  
9 written any -

10 MEMBER ARMIJO: I know, but I mean the  
11 staff - there is an approved topical report not  
12 necessarily to the newer version, the CheckPlus or  
13 whatever they call it.

14 MEMBER BANERJEE: Well, there are -

15 MEMBER ARMIJO: So -

16 MEMBER BANERJEE: - topicals which are  
17 approved, but they are general methodologies. They  
18 leave open the subject of calibration, in situ  
19 calibration, which the staff points out in the SER has  
20 to be done.

21 So, each case you have to show that you  
22 fall within either the universe of experiments that  
23 have been done and calibrations, taking into account  
24 how you account for this Reynolds number  
25 extrapolation, because the experiments are not done at

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 the full Reynolds numbers.

2 Now, during the ACRS meetings, there were  
3 - or meeting, there were questions raised by,  
4 actually, Jack and Graham Wallis as to what happened  
5 when valves partially closed, opened, you know, the  
6 effects on the velocity profile.

7 None of these issues are addressed in  
8 these Caldon reports.

9 MEMBER ARMIJO: Okay.

10 MEMBER BANERJEE: So, they remain, to me,  
11 issues which somehow, somewhere have to be addressed.

12 CHAIRMAN RAY: Well, as we can see, this is  
13 a forensic investigation.

14 MEMBER BANERJEE: Well, when we  
15 investigate, we do investigate carefully.

16 CHAIRMAN RAY: But I trust the applicants  
17 will understand, therefore, that if you've given us  
18 all you can, we appreciate it, but it's not probably  
19 going to enable us to resolve it in the remainder of  
20 this week.

21 And, therefore, we'll have to draft a  
22 comment which is not - which will not be intended as  
23 other than producing the resolution that we fall short  
24 of at this point in time.

25 And my guess is that we're going to steer

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 this thing toward the staff interaction.

2 MEMBER BANERJEE: You should actually note  
3 that in Southern Nuclear's response, they say an ITAAC  
4 has proposed to confirm that the instrumentation  
5 indicated above has been installed in the plant and a  
6 licensed condition is proposed to provide confirmation  
7 that the appropriate administrative controls are in  
8 place.

9 So, they certainly deal with some of the  
10 issues which are required in the staff, sort of,  
11 position. They don't say anything about the testing  
12 and so on which seems to be under Item 4 of the staff  
13 requirements which are put there to show independence  
14 of flow profile and all these other things and  
15 calibrated to specific piping configurations.

16 I don't see that in the letter, but I may  
17 have missed it where they undertake to do that.

18 CHAIRMAN RAY: Well, we'll have a busy rest  
19 of the week trying to decide what we want to say, it  
20 sounds like.

21 MEMBER BANERJEE: Well, let me look  
22 carefully.

23 CHAIRMAN RAY: And having heard this very  
24 fine summary of where we stand, does anybody have  
25 anything more they want to say to us?

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           MEMBER AUGHTMAN: I think we've heard some  
2 of the remaining questions and we will look into what  
3 additional information we might be able to provide  
4 between now and Thursday.

5           CHAIRMAN RAY: Yes, and I would think as  
6 far as the full committee meeting goes, among the  
7 things that we should be talking about here is where  
8 we're going to talk about you have a standard overview  
9 kind of presentation in mind, I'm sure, but you can  
10 certainly insert within the time constraints that we  
11 have to live with in the full committee, some update,  
12 if you want, or not even an update, but some summary  
13 of how you view the issue as Sanjoy has described it  
14 here.

15           Okay. We will want to note the discussion  
16 that we held both on the seismic qualification at the  
17 - of the site and the source models that are more  
18 relevant to Summer and to Vogtle that apply.

19           But focusing here primarily on Vogtle, the  
20 - we'll want to make note of the discussion that we  
21 held that was, as far as I'm concerned, anyway,  
22 satisfactorily addressed the containment vessel  
23 coating, its inspection, its accessibility and so on.

24           I think it's important for us to acknowledge that we  
25 reviewed that.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1           And the discussion, Sanjoy, back to you  
2 again, that we had on heavy gases, isn't relevant to  
3 Vogtle, only to Summer, because of the Norfolk  
4 Southern Rail Line.

5           MEMBER BANERJEE: External hazards.

6           CHAIRMAN RAY: What?

7           MEMBER BANERJEE: It's because of external  
8 hazards.

9           CHAIRMAN RAY: Right.

10          MEMBER BANERJEE: I don't think Vogtle has  
11 a railway line running through it.

12          CHAIRMAN RAY: Right. So, I make note of  
13 that just because I got it on the same list here, but  
14 it's pertinent to Summer and not to Vogtle.

15          Okay. So, that's the list of to do's that  
16 I have accumulated. Weidong, do you have anything  
17 more?

18          Okay. Then let me ask the members if  
19 there's anything I've omitted that they think should  
20 be mentioned.

21          Sanjoy, starting with you.

22          MEMBER BANERJEE: Are we talking of Vogtle  
23 or Summer?

24          CHAIRMAN RAY: Both, actually, but I think  
25 the more important is Vogtle.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 Sam, do you have anything?

2 MEMBER ARMIJO: No, I think you've got them  
3 all.

4 CHAIRMAN RAY: Okay.

5 MEMBER RYAN: Nothing else.

6 CHAIRMAN RAY: All right. The piping will  
7 show up in Vogtle even though it came up that it's  
8 applicable equally. Charlie.

9 MEMBER BROWN: Only as how we address the  
10 communication information back to the TSC from the  
11 multiple plants.

12 CHAIRMAN RAY: Again, I did - I talked  
13 about the combined TSC, but I -

14 MEMBER BROWN: Didn't talk about -

15 CHAIRMAN RAY: I should have done that,  
16 yes. Let me -

17 MEMBER BROWN: If you had that next, I'm  
18 just amplifying that -

19 CHAIRMAN RAY: I did.

20 MEMBER BROWN: - you had a good suggestion  
21 yesterday and -

22 CHAIRMAN RAY: Somehow when I picked this  
23 list here, this is the cybersecurity.

24 MEMBER BROWN: Cybersecurity issue -

25 CHAIRMAN RAY: Yes.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MEMBER BROWN: - relative to what level  
2 you send information. The validity of data and  
3 consistency with the main control rooms.

4 CHAIRMAN RAY: Now, I was advised, I'm  
5 looking now that we're here, what did we learn about  
6 the presentation of the broad subject of cybersecurity,  
7 Denise, on the digital I&C committee?

8 MS. McGOVERN: The senior management from  
9 NSER is meeting with Dr. Hackett today at 11:45 to  
10 define the scope of the meeting on February 23rd with  
11 Mr. Brown's subcommittee.

12 I spoke to the chief of the cybersecurity  
13 branch and he would welcome to use this as an example  
14 in the discussion of cybersecurity. We can talk  
15 specifically about communication to the TSC.

16 My understanding is that there is no  
17 question as to the applicants meeting the regulatory  
18 requirement in this area.

19 CHAIRMAN RAY: That sounds all right to me.  
20 The real question then is, Charlie, if we have  
21 adequate assurance that the TSC specifically would be  
22 used, as Denise says, as an example of the broader  
23 issue of cybersecurity regulatory guide update, I  
24 guess it is.

25 MEMBER BROWN: Well, there's Reg Guide 5.71

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 is - sets a set of requirements and the requirement's  
2 guidance. Then the ISG - not ISG. Excuse me. Reg  
3 Guide 1.152 is cybersecurity computer systems. I've  
4 forgotten the exact title of that, and it references.

5 And so that's what we're dealing with, but  
6 we're going to feed this in, as well as there's now an  
7 SRP, Chapter 13.6 something that -

8 MS. McGOVERN: It's the cybersecurity SRP.

9 MEMBER BROWN: Okay. It raised its head  
10 about a week ago. But, anyway, we're trying to meld  
11 those in and discuss this and use this as an example,  
12 but we still got to deal with it - my issues - I guess  
13 my point is I think we ought to raise it as something  
14 to talk - a discussion issue in terms of being  
15 considered. And how we do that -

16 CHAIRMAN RAY: So, you think it should go  
17 in the Vogtle letter as something that's noted as  
18 being addressed?

19 MEMBER BROWN: Yes. I think roughly  
20 relative to how we discussed yesterday on that, which  
21 was a - I think was a good approach.

22 CHAIRMAN RAY: Okay. Again, to be clear,  
23 simply acknowledging the existence of an issue that's  
24 going to be addressed generically.

25 MEMBER BROWN: Yes.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 CHAIRMAN RAY: Fair statement?

2 MEMBER BROWN: Yes. And people are trying  
3 to address that now and - John Stetkar and I had both  
4 raised the - and I think this meeting has also, but  
5 the integration of cybersecurity between the various  
6 groups which seem to be which we picked up in the last  
7 meeting, it was like a handoff issue between licensing  
8 ISG 6 and licensing how do you incorporate that?  
9 Well, we don't talk about it. First, we do ISG 6, and  
10 then we hand it off and somebody figures out after  
11 they're doing something else about cybersecurity. We  
12 said, no, we got to integrate it.

13 So, that's all part of the package. We  
14 actually do that in here.

15 CHAIRMAN RAY: I'm only trying to deal with  
16 this one itchy-bitsy problem of the role of the TSC and  
17 how important is it that it have --

18 MEMBER BROWN: Validity data.

19 CHAIRMAN RAY: - cybersecurity at whatever  
20 level. And I'd rather not have that be a to do coming  
21 out of the - I don't mind including it as a by the  
22 way, this is going to be addressed kind of thing, but  
23 I don't want to try and make it an issue to be  
24 resolved in the context of this COL.

25 MEMBER BROWN: Right. It should be raised

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 as a discussion point on validity data and how we use  
2 the TSC.

3 CHAIRMAN RAY: For resolution.

4 MEMBER BROWN: For resolution.

5 CHAIRMAN RAY: Generically.

6 MEMBER BROWN: Yes.

7 CHAIRMAN RAY: Okay. Joy.

8 MEMBER REMPE: You mentioned it earlier in  
9 the day, but it's not on your list of items just said,  
10 was how you're going to incorporate changes from Rev  
11 18, 19 or whatever version.

12 So that ought to be on the list?

13 CHAIRMAN RAY: Okay. That's a good point.  
14 The presentation that Joe gave us and Frank commented  
15 on and all that kind of stuff. Okay.

16 MEMBER BROWN: Yes, thank you, Joy, because  
17 I forgot. I got wrapped up in the cyber thing and  
18 didn't bring that one up because it -

19 MEMBER REMPE: I was surprised you didn't  
20 mention it.

21 CHAIRMAN RAY: Jack, do you have anything?

22 MEMBER SIEBER: I have nothing to add.

23 CHAIRMAN RAY: Okay. So, that completes  
24 the list of items. I presume you guys don't have any  
25 presentations you want to make to us at this time?

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MR. SEBROSKY: No.

2 CHAIRMAN RAY: And with regard to the full  
3 committee meeting later this week, Amy, are you set,  
4 do you think? Do you need input of any kind?

5 MS. AUGHTMAN: We believe we're set. We're  
6 currently planning to give a general flyover, I'll  
7 call it, of the contents of the application with the  
8 only detailed topics we were planning to get into  
9 being the IST program for the squib valves, the  
10 containment cleanliness program overview, and the  
11 coatings inspection overview. And we did condense  
12 that to two slides.

13 CHAIRMAN RAY: And you did condense it to  
14 two slides, you say. Okay.

15 All right. Anything from any of the  
16 members? With that, we'll adjourn the meeting.

17 (Whereupon, the meeting was adjourned at  
18 10:41 a.m.)

19  
20  
21  
22  
23  
24

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701



*SCE&G • Santee Cooper  
Shaw • Westinghouse Electric Company*

# **VC Summer Units 2 and 3 FSAR Chapters 11, 12 and 13 (without Emergency Planning)**

Amy M. Monroe – Licensing  
New Nuclear Deployment

# Chapter 11

## Radioactive Waste Management

- DCD Incorporated by Reference
- Standard material incorporated
- Site-specific information of interest
  - Liquid Radwaste System (WLS) and Waste Water System (WWS)
  - Gaseous Waste Management
  - Effluent Monitoring

# Section 11.2

## Waste Management

- WLS connects to WWS within the Exclusion Area Boundary for dilution to ensure release limits are met.
- LADTAP II code utilized to determine estimated dose rates and doses.
  - Doses to individuals due to liquid waste discharges are within the limits of 10 CFR Part 50 Appendix I
  - Based on estimated population doses a liquid cost benefit analysis was performed and no augments were determined to be cost beneficial.

# Section 11.3

## Gaseous Waste Management

- GASPAR II computer code used to calculate dose and dose rates.
  - Gaseous waste discharge doses are within the regulatory limits of 10 CFR Part 50 Appendix I
  - Based on estimated population doses a gaseous radwaste cost benefit analysis was performed and no augments were determined to be cost beneficial.

# Section 11.5

## Radiation Monitoring

- SCE&G is extending the VCSNS Unit 1 quality assurance of radiological effluent and environmental monitoring program based on RG 4.15 Revision 1 to Units 2 and 3.

# Chapter 12

## Radiation Protection

- DCD Incorporated by Reference
- Standard material incorporated
- Site-specific departures to address TSC and OSC relocations (Figure changes)
- Site –specific evaluations of dose to construction workers

# Section 12.4

## Dose Assessment

- Doses to construction workers
  - Direct radiation as well as liquid and gaseous radioactive effluents from Unit 1 on Units 2 and 3 workers
  - Due to construction overlap, direct radiation as well as liquid and gaseous radioactive effluents from Unit 2 on Unit 3 workers

# Chapter 13 Excluding 13.3

## Conduct of Operations

- DCD Incorporated by Reference
- Standard material incorporated
- Site-specific issues
  - Organizational Structure

# Questions?





United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# **Presentation to the ACRS Subcommittee**

**V. C. Summer Units 2 and 3 COL Application Review**

**Chapters 11,12, and 13**

Radioactive Waste Management,  
Radioactive Protection, and  
Conduct of Operations

January 10 -11, 2011

# Summer FSAR Chapter 11

## Radioactive Waste Management

FSAR Section	Site-Specific Evaluations
11.1 Source Term	<ul style="list-style-type: none"> <li>• None*</li> </ul>
11.2 Liquid Radioactive Waste Management	<ul style="list-style-type: none"> <li>• VCS COL 11.2-2, Liquid waste discharge cost-benefit analysis</li> <li>• VCS COL 2.4-5 and VCS 15.7-1, Doses from accidental release from liquid waste tank failure</li> <li>• VCS COL 11.5-3, Compliance with 10 CFR Part 50, Appendix I, Sections II.A and II.D for liquid waste discharges</li> <li>• VCS SUP 11.2-1, Liquid waste discharge pipe</li> </ul>
11.3 Gaseous Radioactive Waste Management	<ul style="list-style-type: none"> <li>• VCS COL 11.3-1, Gaseous waste discharge cost-benefit analysis</li> <li>• VCS COL 11.5-3, Compliance with 10 CFR Part 50, Appendix I, Sections II.B and II.C for gaseous waste discharges</li> </ul>
11.4 Solid Radioactive Waste Management	<ul style="list-style-type: none"> <li>• None*</li> </ul>
11.5 Radiation Monitoring	<ul style="list-style-type: none"> <li>• VCS COL 11.5-2, QA for effluent and environmental monitoring program</li> <li>• VCS COL 11.5.3, Compliance with 10 CFR Part 50, Appendix I</li> </ul>

\* This section is entirely IBR or IBR/standard.

# Summer FSAR Chapter 12

## Radiation Protection

FSAR Section	Site-Specific Evaluations
12.1 Assuring ALARA	<ul style="list-style-type: none"> <li>• None*</li> </ul>
12.2 Radiation Sources	<ul style="list-style-type: none"> <li>• None*</li> </ul>
12.3 Radiation Protection Design Features	<ul style="list-style-type: none"> <li>• VCS DEP 18.8-1, Relocation of Operations Support Center</li> <li>• VCS SUP 11.2-1, Liquid waste discharge pipe</li> </ul>
12.4 Dose Assessment	<ul style="list-style-type: none"> <li>• VCS SUP12.4-1, Construction worker dose</li> </ul>
12.5 Health Physics Facility Design	<ul style="list-style-type: none"> <li>• VCS DEP 18.8-1, Relocation of Operations Support Center</li> </ul>

\* This section is entirely IBR or IBR/standard.

# Summer FSAR Chapter 13

## Conduct of Operations

FSAR Section	Site-Specific Evaluations
13.1 Organizational Structure of Applicant	<ul style="list-style-type: none"> <li>• VCS COL 13.1-1 Organization structure</li> <li>• VCS COL 9.5-1 Fire protection</li> <li>• VCS COL 18.6-1 Qualifications of the nuclear plant technical support personnel</li> <li>• VCS COL 18.10-1 Responsibilities of the manager in charge of nuclear training</li> </ul>
13.2 Training	<ul style="list-style-type: none"> <li>• None*</li> </ul>
13.3 Emergency Planning	<ul style="list-style-type: none"> <li>• Presented (1/10/2011)</li> </ul>
13.4 Operational Programs	<ul style="list-style-type: none"> <li>• None*</li> </ul>
13.5 Plant Procedures	<ul style="list-style-type: none"> <li>• VCS SUP 13.5-1 Plant procedures</li> <li>• VCS SUP 13.5-2 Plant procedures</li> </ul>
13.7 Fitness for Duty	<ul style="list-style-type: none"> <li>• None*</li> </ul>
13.8 Cyber Security	<ul style="list-style-type: none"> <li>• None*</li> </ul>

\* This section is entirely IBR or IBR/standard.



*SCE&G • Santee Cooper  
Shaw • Westinghouse Electric Company*

# **VC Summer Units 2 and 3 FSAR Chapters 15, 16 and 17**

**Amy M. Monroe – Licensing  
New Nuclear Deployment**

# Chapter 15

## Accident Analysis

- DCD Incorporated by Reference
- Standard material incorporated
- Site-specific  $X/Q$  values provided in Subsection 2.3.4 are bounded by the values in DCD Section 15A

# Chapter 16

## Technical Specifications

- DCD Incorporated by Reference
- Standard material incorporated
- Site-specific items are associated with addressing the remaining brackets [] in the AP1000 generic technical specifications.
- Part 4 of the VCSNS COLA reflects the VCSNS Technical Specifications.

# Chapter 17

## Quality Assurance

- DCD Incorporated by Reference
- Standard material incorporated
- Pre-COL activities are being performed under the existing VCSNS Unit 1 Operational Quality Assurance Plan as supplemented by the New Nuclear Deployment Quality Assurance Plan

# Quality Assurance Program Description (QAPD)

- Site-specific QAPD in COLA Part 13 is based on NEI 06-14A Revision 7
- Since all nuclear facilities are located on a single site, the nuclear organization is located primarily on site
- Implementation of the QAPD begins at issuance of the COL for VCSNS Units 2 and 3

# Questions?





United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# **Presentation to the ACRS Subcommittee**

**V. C. Summer Units 2 and 3  
COL Application Review**

**Chapters 15, 16, and 17**  
Accident Analysis,  
Technical Specifications, and  
Quality Assurance Program

January 10 -11, 2011

# Staff Review Team

- Technical Staff
  - Chapter 15:**
    - Michelle Hart, Siting & Accident Consequences Branch
  - Chapter 17:**
    - Juan Peralta, Branch Chief, Quality and Vendor Branch
    - Raju Patel, Lead Reviewer, Quality and Vendor Branch
- Project Managers
  - Donald Habib, Chapter 15
  - Sujata Goetz, Chapter 16
  - Tom Galletta, Chapter 17

# Summer FSAR Chapter 15

## Accident Analysis

FSAR Section	Site-Specific Evaluations
15.0 Accident Analysis	• None*
15.1 Increase in Heat Removal from Primary System	• None*
15.2 Decrease in Heat Removal by the Secondary System	• None*
15.3 Decrease in Reactor Coolant System Flow Rate	• None*
15.4 Reactivity and Power Distribution Anomalies	• None*
15.5 Increase in Reactor Coolant Inventory	• None*
15.6 Decrease in Reactor Coolant Inventory	• None*
15.7 Radioactive Release from a Subsystem or Component	• VCS COL 15.7-1, Consequence of Liquid Waste Tank Failure
15.8 Anticipated Transients without Scram	• None*
15A Evaluation Models and Parameters for Analysis of Radiological Consequences of Accidents	• <b>VCS COL 2.3-4, DBA Radiological Consequences Analyses</b>
15B Removal of Airborne Activity from the Containment Atmosphere Following a LOCA	• None*

\* This section is entirely IBR or IBR/standard.

# Summer FSAR Chapter 16

## Technical Specifications

FSAR Section	Site-Specific Evaluations
16.1 Technical Specifications	<ul style="list-style-type: none"><li>• VCS COL 16.1-1 related to technical specifications for use as a guide in development of the plant-specific technical specifications.</li></ul>
16.2 Design Reliability Assurance Program	<ul style="list-style-type: none"><li>• None*</li></ul>
16.3 Investment Protection	<ul style="list-style-type: none"><li>• None*</li></ul>

\* This section is entirely IBR or IBR/standard.

# Summer FSAR Chapter 17

## Quality Assurance Program

FSAR Section	Site-Specific Evaluations
17.1 Quality Assurance During the Design and Construction Phases	<ul style="list-style-type: none"> <li>• VCS COL 17.5-1 QAP prior to COL issuance</li> </ul>
17.2 Quality Assurance During the Operations Phase	<ul style="list-style-type: none"> <li>• None*</li> </ul>
17.3 Quality Assurance During the Design, Procurement, Fabrication, Inspection, and/or Testing of Nuclear Power Plant Items	<ul style="list-style-type: none"> <li>• None*</li> </ul>
17.4 Design Reliability Assurance Program	<ul style="list-style-type: none"> <li>• None*</li> </ul>
17.5 Quality Assurance Program Description – New License Applicants	<ul style="list-style-type: none"> <li>• VCS COL 17.5-1 QAP following COL issuance</li> </ul>
17.6 Maintenance Rule Program	<ul style="list-style-type: none"> <li>• None*</li> </ul>

\*This section is entirely IBR or IBR/Standard

January 10–11, 2011

# VCS COL 2.3-4

## DBA Radiological Consequences Analyses

- **Issue**

- Appropriate incorporation by reference of the DBA dose analyses from the AP1000 DCD to thereby show compliance with the offsite dose factors in 10 CFR 52.79(a)(1) and the control room dose criterion in GDC 19.
  - VCS DEP 18.8-1 site-specific TSC (SER 13.3)

- **Resolution**

- Summer site characteristic short-term atmospheric dispersion ( $\chi/Q$ ) values are bounded by the values given in AP1000 DCD as site parameters. (SER 2.3)
  - Site characteristic  $\chi/Q$  values are the only site-related DBA dose analysis inputs
  - Dose is directly proportional to the  $\chi/Q$  values for each time period
  - Summer  $\chi/Q$ s < AP1000  $\chi/Q$ s
  - Summer DBA doses < AP1000 DBA doses
- AP1000 DCD showed compliance with the offsite and control room dose factors for all DBAs, therefore Summer also complies.

# QA Design and Construction Phases

- FSAR Section 17.1
  - Prior to COL issuance - SCE&G is using VCSNS Unit 1, Operational QAP, for oversight of contractors.
  - Staff inspected the program as it is being applied to VCSNS Units 2 and 3 and found it acceptable
    - Staff performed limited scope inspection
    - Identified one violation
    - Applicant has responded to the violation
    - Staff has found the applicant's response acceptable

# QA Program Description

- FSAR Section 17.5
  - Following COL issuance – SCE&G will use the QAPD described in the COL FSAR.
    - COL FSAR QAPD is based on NEI Template 06-14, Revision 7.
  - The NRC staff used the requirements of Appendix B to 10 CFR Part 50 and the guidance in SRP Section 17.5 for evaluating the acceptability of the VCSNS COL FSAR Chapter 17.
  - COL Information Item 17.5-1 is addressed in Section 17.5 of the COL FSAR.
  - The staff evaluated the QAPD and concluded:
    - The QAPD complies with the acceptance criteria in SRP Section 17.5 and with the commitments to applicable regulatory guidance.
    - The QAPD provides adequate guidance for the applicant to establish controls that, when properly implemented, complies with Appendix B.



# **Presentation to the ACRS Subcommittee**

**Summer Units 2 and 3 COL Application Review**

**Staff Action Items from 1/10/11 Meeting**  
January 10 – 11, 2011

# Action Items From 1/10/10 Meeting

- Provide HABIT Verification Documentation
- Provide a Discussion of How Design Control Document Revision 18 and the Combined License Application Revisions are being reviewed by the staff

# Action Items From 1/10/10 Meeting

- HABIT used by staff for confirmatory calculation as an independent check to determine if the staff agrees with the applicant's conclusion that the following chemicals do not pose a threat to control room habitability
  - 28% ammonium hydroxide (Unit 1)
  - Cyclohexylamine (Norfolk Southern rail)
  - Chlorodifluoromethane (Norfolk Southern rail)
- HABIT code endorsed in Regulatory Guide (RG)1.78, "Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release"
  - RG indicates when boiloff or a slow leak is analyzed, the effects of density on vertical diffusion may be considered
  - RG indicates that density effect of heavier-than-air gases should not be considered for releases of a violent nature or for release material that becomes entrained in turbulent air near buildings
- HABIT Code described in NUREG/CR-6210, "Computer Codes for Evaluation of Control Room Habitability (HABIT)"

# Tie between DCD Revision 17 and COL Review

